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RACE IN HISTORY.*

TIMES of political and religious change have an unparalleled interest in the history of a people ; it is during such times that many latent characteristics which strongly mark races and nations become conspicuous. Whatever may be the inherent qualities of a race, these are certain to influence, or to be influenced greatly by new ideas on matters which so powerfully affect human feelings and passions. Every race, pure or mixed, is modified by political or religious theories ; not that any creed or any form of government is peculiar to anyone, but the manner in which a religious creed or political institution operates is almost solely dependent on the character of that one by which it is adopted. Let the government be monarchical or republican, the social conditions will determine its special operation, so that the monarchy or republic shall be developed entirely in relation to the instincts of the race among whom it is instituted. And, also, let the creed be orthodox or heterodox, Christian, Mahometan, or idolatrous, its tenets are sure to be modified by the feelings and sympathies of the people among whom it is propagated.

No period of British history is, on this account, more instructive than that which commences with the civil war in England in the reign of Charles the First, and ends with the insurrection of 1745 in the Scottish Highlands for the purpose of restoring the Stuart dynasty. During that period the religious creed and the form of government had undergone an extraordinary and rapid change ; and the people in the different parts of the British Isles were affected variously by it, according as Celt or Teuton preponderated among them. The progress of the reformation brought out very boldly the different racial

* *History of England.* By Lord Macaulay. London: Longmans.

peculiarities. In Scotland the religious change was rapid and accompanied with much fury and violence. The persecution which the reformed faith had to endure in that country evolved the Celtic fervency and enthusiasm as well as the Teutonic imperturbable firmness and dogmatism of the mixed people. In Ireland protestantism entered as the religion of the rulers; owing to which the old creed became the suffering one, a fact which rendered the masses of the population averse to listen to any arguments adduced in favour of the former; for the Celts are very prone to believe that the side of weakness and suffering is the right one, and usually court, rather than avoid, martyrdom. "Be always on the weak side," is a favourite Celtic adage. The Scotch, having adapted presbyterian tenets, clung to them in defiance of force, sword, and fire; nor could any amount of persecution compel them to relinquish these; on the contrary, the more they were persecuted the more confirmed did they become in their opinions. The Irish people have been almost as much persecuted for Roman Catholicism as the Scotch were for presbyterianism. It is the same fervent enthusiastic character which made the Scotch hold to their presbyterianism that has made the Irish people hold to their Roman Catholicism. The results in both countries have been widely different so far as social, moral, and intellectual progress are concerned; but the difference in the results may be traced mainly to difference of creed and political institutions. All error is opposed to human progress, and no error is more opposed to it than religious superstition; presbyterianism is christianity with fewer superstitions than Roman Catholicism; so the balance of superstition in their favour has partly helped to render the Irish people less progressive than the Scotch; while the amount of it thrown away has greatly contributed to the advancement of the latter nation. Circumstances also secured to the Scotch their national independence, owing to which they were governed by political institutions of their own growth until united with England in the reign of Queen Anne; while Ireland, struggling for independence ever since her partial conquest by Henry the Second, was governed, so far as that could be done, by political institutions imported from England until her union with the latter country in 1801. This diversity in the political conditions of Scotland and Ireland accounts further for the greater progress of the former. With destinies so different, however, and with outward peculiarities so apparently opposite, the Scotch and Irish characters have much more in common than many of the intelligent would feel disposed to believe. With external austerity, the Scotch have in their nature more wit and vivacity than those who are not intimate with them are at all aware; and the Irish have more coolness and forethought when not labouring under excite-

ment than has ever been accredited to them. Both have this in common that they are disposed to fatalistic faiths and enthusiastic forms of worship. Both nations opposed the change of the ruling dynasty of Britain, and fought for the old.

In England Teutonic and Celtic elements seem to have been more evenly blended than in Ireland or Scotland; so that Celtic socialism had been better tempered by Teutonic individualism. The consequence was that personal freedom and religious toleration were more successful in England than in the sister countries.

The history of the period which we have mentioned is of intense interest to the student of British anthropology; and it has fortunately been written by men of superior genius and talent, one of whom was pre-eminently gifted with all the mental endowments requisite to an historical artist; and accordingly he has given us a book which does not yield in clear and vivid delineation to any of the kind written in the English language. As Lord Macaulay brought such superior qualities to the task, we need not wonder that his work has realised all the high expectations entertained of him by the learned and enlightened. Glad were all the lovers of literature when the brilliant orator and essayist announced his intention of writing a history of England, and great was the delight of all when two volumes of that history appeared. It was a work surpassing the most sanguine expectations, whether the clearness of the style, the arrangement of the matter, the acuteness of the arguments, the vividness of the details, or the wonderful discriminative delineations of character were to be considered. The various changes which took place in men's characters and opinions, the difference between one period and another, the progress made in each, the distinctive characteristics of the original peoples from whose intermixture the English nation has been formed, are investigated and portrayed with matchless ability. The weaknesses which were displayed under the influence of certain sectarian whims; the bigotry, enthusiasm, and fanaticism of contending factions; the blindness of partisan zeal and the violence of political opponents, are exceedingly well analysed, and are delineated with great graphic power. In these analyses and delineations the student of the science of man will be able to trace the peculiar instincts and moral sentiments of the various races which have blended into one great and powerful people.

In treating of race, Lord Macaulay frequently errs in theory. He was not an anthropologist, and probably had studied little or nothing of the science. Perhaps this is not to be regretted, as in that case a work so highly artistic might have its beauty and excellence impaired by too much scientific disquisition. That which is required of the

historian is to delineate peoples and nations as they exist in the concrete ; as he knows and observes them ; as they are influenced and modified by circumstances at various periods ; and this the author has done in an admirable manner. Errors and exaggerations doubtless abound ; as the writer is extremely fond of contrasts, and has light and shade always in view. Like all those who are richly endowed with the artistic mind his primary idea is a beautiful and perfect work, to accomplish which he looks upon men and nations as mere material ; but the love of truth is ever present, and rhetorical ornament is chiefly employed for the purpose of rendering a truthful portraiture of men and peoples more conspicuous. Provided with such a portraiture the anthropologist is powerfully aided in his researches ; and he will find them eminently suggestive even when he thinks he has just grounds for disputing their correctness. It is much to be regretted that the illustrious historian did not live until he brought his history down to the year 1745. However, the history of the last insurrection that took place for the purpose of restoring the Stuart dynasty has been so well handled by Lord Mahon that the loss sustained by literature through the death of Lord Macaulay is in a great measure compensated.

No author can write the history of a race unless he partly belongs to that race himself ; a statistical account or a brilliant romance he can write of them if possessed of the suitable talents ; but not the chronicle that livingly expresses their instincts, feelings, sentiments, and mental peculiarities ; and, racially, Macaulay was qualified for writing British history. By the mother's side an Englishman, the blood of all the races forming the English nation flowed in his veins ; by the father's side he inherited those qualities of mind and character which have distinguished the Scandinavian Celtic race of the Scottish Highlands. From the former he derives his shrewdness, his calmness, and his keen practical sense ; from the latter his eloquence, his rhetorical aptitude, and his poetic cast of mind. He is not only of the Scottish Highland race, but a descendant of one of their bards. An elegy full of tenderness and pathos, and an exquisite love song displaying a luxuriant fancy found among old collections of Gaelic songs and ballads are the compositions of "Isachari Mac Aulai," one of his ancestors. In these two beautiful pieces that inherited genius may be traced which pervades his "Lays of Ancient Rome," his essays, his speeches, and his English history.

The first part of the work being a review of English history from the earliest times to the commencement of the reign of James the Second, is remarkable for its comprehensiveness and concentration ; but here and there the brilliant writer commits grave errors. "Nothing," says he, "in the early existence of Britain indicated the

greatness which she was destined to attain. Her inhabitants, when first they became known to the Tyrian mariners, were little superior to the natives of the Sandwich Islands."

No authentic history points to a period when the inhabitants of Britain were as low in civilisation as those of the Sandwich Islands before their conversion to Christianity; and if Britain was inhabited at the period to which the author refers by any of the mixed races that have blended into the mixed ones, which now inhabit her, there is everything to indicate her present superiority in their organisation; and that she was then inhabited by these there is little room to doubt. Julius Cæsar found a regularly organised priesthood in the island; and according to his account of them their knowledge and wisdom, when we consider the age, were by no means contemptible. These were the Druids. The Sandwich Islanders have no Stonehenge. The British Druidical schools, according to the same writer, were superior to those of Gaul; and thither the Gallic youths resorted for the purpose of being initiated in the mysteries of that worship. Tacitus, in his *Life of Agricola*, informs us that the British youths were more talented than those of Gaul, and that they acquired a knowledge of the Roman language and literature with wonderful facility; also, that, although the Britons were conquered and would easily submit to pay taxes, they could not endure the idea of being considered as slaves; and, consequently, stoutly opposed all attempts made by the Romans to curtail their personal freedom. From these remarks of the two great Roman writers, as well as from numerous other sources, we clearly discern in the past the germ of the present greatness of the British people. They are great because the races of which they are composed are physically, morally, and intellectually superior. They are great because they have superior brains, nerves, bones, and muscles. We pass from this to another passage, which assumes that the English, at the time that the Scandinavian invasion commenced, were a pure Teutonic race. "The same atrocities," remarks the author, "which had attended the victory of the Saxon over the Celt, were now, after the lapse of ages, suffered by the Saxon at the hand of the Dane. Civilisation, just as it began to rise, was met by this blow, and sank down once more. Large colonies of adventurers from the Baltic established themselves on the eastern shore, spread gradually westward, and, supported by constant reinforcements from beyond the seas, aspired to the dominion of the whole realm. The struggle between the two fierce Teutonic breeds lasted during six generations."

This is a clear and concise description of the long struggle between English and Danes; but the Anglo-Saxons at the time that the Danish invasions began were not a pure Teutonic breed, but a Teutonic British

one. The Anglo-Saxon language has elements common to the Cymraeg and Gaelic in its structure; and as that is so it may be judiciously inferred that it is a speech formed from the language of Eastern Britain and that of the original Saxon invaders; for before the Saxons had ever put foot on British ground there is strong reason for believing that the tongue of Eastern Britain approached nearer to that of Germany than that of the West did. As we have no specimen either of the language of Eastern Britain or of that of the first Saxon invaders, we are unable to assert how much of the Anglo-Saxon, written long afterwards, was native or imported. It is highly probable that Eastern British and original Saxon had much in common, and that they rapidly amalgamated into one speech. We must not lose sight of the facts, that the masses of the cultivators of the soil continued to be Britons after the Saxons had obtained possession, and that those Britons who were driven westward were chiefly dispossessed chiefs and their retainers. It should always be borne in mind that warriors do not contend for victory with no other aim than putting their hand to the plough; it is rather to secure others to perform that useful labour for them that they fight; and so anxious were the Saxons to have the Britons to do this for them that they were not satisfied with the numbers of the vanquished on the conquered territory only; but made raids into those British districts which still preserved their independence, and thence carried off numerous captives for the purpose of tilling the soil for them. But a vanquished race, when of superior organisation, does not hopelessly continue in serfdom; so, in the frequent and sanguinary wars which so long subsisted between the kingdoms of the Anglo-Saxon heptarchy, the British serfs had frequent opportunities of ruining their masters and rising into power themselves. During centuries of warfare, therefore, by the vicissitudes of fortune, Saxon thanes were reduced to serfs and British serfs were raised to the dignity of thanes. Independently of these freaks of fortune, intermarriages between Saxon and British families were frequent; owing to which the English, at the time when the Danish invasions commenced, were a thoroughly crossed Saxon-British breed. The Anglo-Saxons and the Danes were not "two fierce Teutonic breeds," as the talented historian asserts; but a fierce Teuto-Celtic and a fierce Teutonic breed.

In his beautiful and vivid description of the Norman conquerors of England the same error is committed by the author; namely, that of fancying that these were also a Teutonic race. As this noble delineation of the Norman people is one of the happiest effusions of the author's genius, and is as powerful a specimen of word painting as is to be found in the work of any writer, we quote the following passage from it:—

"They abandoned their native speech and adopted the French tongue, in which the Latin was the predominant element. They speedily raised their new language to a dignity and importance which it had never before possessed. They found it a barbarous jargon; they fixed it in writing; and they employed it in legislation, poetry, and romance. They renounced that brutal intemperance to which all the other branches of the Germanic family were too much inclined. The polite luxury of the Norman presented a striking contrast to the coarse voracity and drunkenness of his Saxon and Danish neighbours. He loved to display his magnificence not in huge piles of wood and hogsheads of strong drink, but in large and stately edifices, in rich armour, gallant horses, choice falcons, well ordered tournaments, banquets rather delicate than abundant, and wines remarkable rather for their exquisite flavour than for their intoxicating power. That chivalrous spirit which has exercised so powerful an influence on the politics, morals, and manners of the European nations, was found in the highest exaltation among the Norman nobles. Those nobles were distinguished by their graceful bearing and insinuating address. They were distinguished also by their skill in negotiation, and by a natural eloquence which they assiduously cultivated. It was the boast of one of their historians that the Norman gentlemen were orators from the cradle. But their chief fame was derived from their military exploits. Every country from the Atlantic Ocean to the Dead Sea witnessed the prodigies of their discipline and valour. One Norman knight at the head of a handful of warriors, scattered the Celts of Connaught. Another founded the monarchy of the Two Sicilies, and saw the Emperors of the East and of the West fly before his arms. A third, the Ulysses of the first crusade, was invested by his fellow soldiers with the sovereignty of Antioch; and a fourth, the Tancred whose name lives in the great poem of Tasso, was celebrated through Christendom as the bravest and most generous of the champions of the Holy Sepulchre."

The distinguishing qualities of a people could not be more vividly and accurately portrayed than in this passage; and these are the qualities of a mixed people, not of a pure race—qualities which have been evolved from the vivacity, sentimentality, and acuteness of the Celt, combined with the perseverance, application, and cool deliberation of the Teuton. The pure Normans did not abandon their native speech, but the mixed Normans did. The language of the mothers, serfs and neighbours, prevailed over that of the fathers and became the speech of the new people. Even the first Normans who obtained possession of Normandy can hardly be said to have been pure Norsemen: for previous to that event the Scandinavians had obtained sure footing on the East Coast of Britain, and, besides, were in possession of Iceland, the Hebrides, and the East of Ireland; and there is very little doubt that many of the mixed Celtic Scandinavian race of the Hebrides and Ireland, were among those Norsemen who first settled

in the North of France. The Norman conquerors of England had probably two-thirds of French blood in their veins; and the conqueror's army was not even composed entirely of Normans. Adventurers from other French provinces flocked to his standard. The Bretons, the descendants of those Britons who had been expelled from their country by the pressure of the Saxon invasion, and had settled in the North-west of France, formed a considerable part of his army, and received a share of that conquered land which, several centuries before, had been wrested from their forefathers by the strong hand of the Teutonic invader. This people, then, whose eminent qualities are so vigorously and brilliantly narrated by Lord Macaulay, were not a German or Teutonic people, as he would imply, but a Teuto-Celtic race in which Celtic elements predominate. The reader who wishes to know fully the history of this remarkable people is referred to Thierry's beautiful history of the Norman conquest.

The Norman people continued distinct from the English for a couple of centuries; and from the reign of William the First to that of John the name of Englishman was held in the greatest contempt. In the reign of Richard the First the historian tells us that the ordinary imprecation of a Norman gentleman was, "Do you take me for an Englishman?" This may be taken as an illustration of the manner in which the vanquished are treated by the victors in all ages and in all countries, and accounts for the many fabulous stories which chroniclers have handed down to us of the subdued peoples by their conquerors; for in such cases the vanquished are usually glad to change their own name and assume that of the victors, to avoid the odium attached to the former. Old Anglo-Saxon chroniclers speak of the entire expulsion of the Britons from England and old Scottish historians relate stories of the complete destruction of the Picts by the Scot; but the reality was that despised Britons and Picts assumed the more honoured name of their conquerors and endeavoured as much as possible to conceal their own origin.

Of the new people evolved from old English and Normans the historian remarks:—

"The disdain with which in the twelfth century the conquerors from the continent had regarded the islanders, was now retorted by the islanders on the people of the Continent. Every yeoman from Kent to Northumberland valued himself as one of a race born for victory and dominion; and looked down with scorn on the nation before which his ancestors trembled. Even those knights of Gascony and Guienne who had fought gallantly under the Black Prince, were regarded by the English as men of an inferior breed, and were contemptuously excluded from honourable and lucrative commands."

Here we have a lucid description of a new people who even excel

those from whom they have been derived ; but still the groundwork of their superiority was of British origin. Of this the anthropologist who considers the facts brought forward in this article will be readily convinced. The various conquests served but to refresh and invigorate the old aboriginal Britons. Those Englishmen who gained the brilliant victories of Cressy and Agincourt are but the old Britons invigorated by successive crossings—the old Britons so truthfully and vigorously delineated by Shakespeare in the dramas of “*King Lear*” and “*Cymbeline*.”

The progress of the new people is finely traced and investigated by the author ; their gradual growth in commerce and arts clearly expounded and charmingly narrated.

In talking of Scotland Lord Macaulay errs with regard to its racial character as he does in the case of England.

“The population of Scotland,” he asserts, “with the exception of the Celtic tribes which were thinly scattered over the Hebrides and over the mountainous parts of the northern shires, was of the same blood with the population of England, and spoke a tongue which did not differ from the purest English more than the dialects of Somersetshire and Lancashire differed from each other. In Ireland, on the contrary, the population, with the exception of the small English colony near the coast, was Celtic, and still kept the Celtic speech and manners.”

The Scotch were indeed the same people with the English in so far as both were descended from the ancient Britons and crossed with Danes and Saxons ; both, indeed, spoke a common language ; but that language, in Scotland, had spread and displaced the language of a Celtic population which was not conquered or removed by, but intermixed with, a neighbouring Teutonic people. In the reign of Malcolm Canmore Anglo-Saxon became the court language of Scotland, and from the south-east of the country it spread along with Anglo-Saxon settlers in the north-east and south-west. The Highland chiefs intermarried, for centuries, with the daughters of Lowland gentlemen, as did Lowland gentlemen with their daughters ; so that, in the course of time, the blood of the upper classes in the Highlands and Lowlands of Scotland must have been very much the same, while in many ways, direct and indirect, that blood must have largely entered into the veins of the lower classes. The Norwegians, having had a hold of the Hebrides and coast of the western Highlands for a long period, intermingled with the native people, owing to which the Scottish Highlanders, who speak a Celtic language, are a Teuto-Celtic race ; while the Lowlanders, who speak a tongue of which the principal elements are Teutonic, have a large admixture of Celtic blood. A common nationality had grown through time in Scotland at the same that the Anglo-Saxons there had been politically and

socially separated from those of England, and, in consequence, the kindred peoples in both countries became two different nations, and for centuries there was but interfusion of blood, but the interfusion of blood already mentioned which took place between Highlanders and Lowlanders united both peoples into one nationality. Gaelic was spoken in Galloway in the reign of James the Sixth, and was the speech of the north-east of Scotland from the Firth of Forth to the Pentland Firth in the reign of Malcolm Canmore and long afterwards. The south-east of Scotland is the portion which is most Teutonic in race, and the north-west that which is most Celtic.

While pointing out ethnographical errors in some stray passages of one of our greatest historians, we must call the attention of the reader to the fact, as has already been done, of the author's wonderful aptitude in delineating, as well as in seizing at a glance, the ethnic characteristics of a people. Social relations, as has already been stated, preponderate in the character of the Celt. The social community, the family, the clan, the nation, are everything with him and the individual almost nothing; the contrary is the case with the Teuton—with him individual interests are all important and social interests altogether subordinate. In the olden times an insult to an individual himself was thought little of by Scottish Highlanders or Irishmen; but an insult to a person's family, clan, or country, if it was not one of the seven deadly sins, was still a sin never to be forgiven by them; and Lord Macaulay tells us that "an insult to his country is that which a Scotchman never forgives," and this is actually so because the Scotchman has so much of the Celt in his nature.

Macaulay is almost invariably happy in his descriptions of the people of those districts of Britain which are more strongly Celtic. At all times we find that people strongly moved by anything affecting social relations, such as attachment to country, clan, or family. His account of the agitation in Cornwall in favour of Trelawney, Bishop of Bristol, whose life was considered by his countrymen to be in danger from the arbitrary manner in which he was dealt with by James the Second. The lucid sketch of the Cornish in the following passage clearly shows how very like they are to their Celtic brethren in other districts:—

"The people of Cornwall, a fierce, bold, and athletic race, among whom there was a stronger provincial feeling than in any other part of the realm, were greatly moved by the danger of Trelawney, whom they honoured less as a ruler of the church than as the head of an honourable house, and the heir through twenty descents of ancestors who had been of great note before the Normans had set foot on English ground. All over the country was sung a song of which the burden is still remembered:—

“‘And shall Trelawney die—and shall Trelawney die?’

Then thirty thousand Cornish boys will know the reason why.’

The strong attachment to chiefs of old standing so strong in the ancient Gauls, the Scottish Highlanders, the Irish, the Welsh, and the Bretons is shown in this vivid description to have been equally strong in the natives of the Duchy of Cornwall.”

While the author's delineations of peoples and individuals are so truthful and so accurate, the influence of a false anthropological theory is perceptible in all his speculations—a theory frequently embraced by metaphysicians, theologians, and various other nondescript pedants and bookworms, but seldom received by those who have themselves observed mankind; the theory that assumes that all the differences observed among the human races depend upon civilisation and other circumstances, a theory adopted by the lamented and talented Buckle, and advocated by the logical John Stuart Mill; a theory proved false by scientific observation and experiment, but adhered to with pertinacity by dogmatic and effeminate closet students. Whenever Lord Macaulay speculates this theory is his evil genius; the “dreamy Celt” gains all the mastery in his mind; but the artistic inventiveness of the Celt retains all its vigour, so much so that the reader is more charmed with his fanciful theorising than with the more accurate disquisitions of Hume or of Gibbon. Always powerful and truthful when he narrates, but ever erring when he philosophises, his speculation on the Irish people is pure romance, but his sketching of them is graphic, vivid, and original in the highest degree. He ever talks of the English as a pure Anglo-Saxon race, whereas from the first they were a very much mixed Anglo-Irish people; and not only so, but the English who settled in Ireland were the most Celtic of the English. They were mostly from the West of England, and were accompanied by large numbers of Welshmen—the Fitzgeralds were Norman Welsh. The English government found to their regret that they became in a short time more Irish than the Irish themselves; and this usually happens whenever a mixed race comes in contact with a pure one with which it has half its elements in common. It was, perhaps, the misfortune of Ireland that the English who settled on her soil were already strongly Celtic; and so, introduced but a small admixture of Teutonic blood. Ireland is, in consequence, the most Celtic of the three British kingdoms.

The historian's comparison of the native Irish to the Helots and of the English of the pale to the Spartans is as philosophically erroneous as it is poetically beautiful. Unlike the Helots, who were slaves, the native Irish were a people who had never been thoroughly subdued by the English. Despised they were not by the English in the same sense in which the Helots were by the Spartans, and could not be. A people, partially conquered, who possessed such enduring spirit of in-

dependence and bravery as ever to prevent their conquest from being complete, and to give the victors frequent cause of annoyance and terror, might be hated but could not seriously be despised. According to the illustrious writer himself, the following were the sentiments of the Irish Helots:—

“He had been brought up to regard the foreign sovereigns of his native land with the feeling with which the Jew regarded Caesar, with which the Scot regarded Edward the First, with which the Castilian regarded Joseph Buonaparte, with which the Pole regards the Autocrat of the Russias. It was the boast of the high-born Milesian that, from the twelfth century to the seventeenth, every generation of his family had been in arms against the English crown. His remote ancestors had contended with Fitz Stephen and De Burgh. His great grandfather had cloven down the soldiers of Elizabeth in the battle of the Blackwater. His grandfather had conspired with O'Donnel. His father had fought under Phelim O'Neil against Charles the First.” And this is the man who stood in the same relation to the Englishman as the Helot did to the Spartan!! As much like a Helot as a Bedouin Arab is like a Negro.

But it is to be remarked that feigning contempt and indulging in contemptuous ridicule is a strong trait in the Teutonic character. In coarse ridicule the Teuton much excels the Celt; moreover, the Teuton who is acquainted with the Celt knows that the latter is usually sensitive; and that, consequently, the darts of ridicule are not aimed at him in vain. On the other hand, the Teutonic races are more imperious and are but little moved by the flashing raillery of the Celts. They can better suppress their emotions, they can better conceal their sufferings, they can better laugh under misfortunes than the Celts. Their great firmness and self-esteem enable them well to conceal their weaknesses. Celts glory in giving way to their emotions; Teutons take pride in restraining them. Owing to these distinctive racial qualities, the historian has been led to think that the feigned contempt of the Anglo-Irish was real, and that the desponding pathetic laments in which Celts are prone to indulge, were signs of their being hopelessly trodden down and vanquished. With a masterly hand does the talented author describe the Gaelic people of Scotland; and as prominent Celtic characteristics are found to unite all peoples who have a strong admixture of Celtic blood, we quote it here, in order to show how much Scottish Highlanders and Irish agree in their leading peculiarities. Of the former he graphically remarks:—

“And yet an enlightened and dispassionate observer would have found in the character and manners of this rude people something which might well excite admiration and a good hope. Their courage was what great exploits, achieved in all the four quarters of the globe, have since proved it to be. Their intense attachment to their own tribe, and to their own patriarch, though politically a great evil, par-

took of the nature of virtue. The sentiment was misdirected and ill-regulated, but still it was heroic. There must be some elevation of soul in a man who loves the society of which he is a member, and the leader whom he follows with a love stronger than the love of life. It was true that the Highlanders had few scruples about shedding the blood of an enemy ; but it was not less true that they had high notions of the duty of observing faith to allies and hospitality to guests."

To illustrate this brilliant delineation of the Scoto-Gaelic character, we beg to quote Lord Mahon's beautiful description of the devotion and bravery of the same people at the battle of Culloden :—

"Yet let it not be deemed that even then their courage failed. Not by their forefathers at Bannockburn, not by themselves at Preston and Falkirk, not in after years when discipline had raised and refined the valour of their arms, not on the shores of the Nile, not on that other field of victory when their gallant chief with a prophetic shroud (it is their own superstition) addressed to them only these three words 'Highlanders, remember Egypt,' not in those hours of triumph and of glory was displayed a more firm and resolute bravery than now in the defeat of Culloden. The right and centre had done all that human strength or human spirit could do, they had yielded only to necessity and numbers, and, like the captive monarch at Pavia, might boast that everything was lost but their honour."

In this description we recognise the same race that fought under Galgacus against the Romans at the foot of the Grampians. As frequently remarked the essential characteristics of the British are still essentially the same as the most ancient writers who acquired any knowledge of these Isles found them to be. From the extracts made from Lord Macaulay's work it will clearly appear that the qualities ascribed to Celts by writers of our own day are very much the same as those ascribed to them by the ancient writers of Greece and Rome. According to the oldest writers they were daring, excitable, patriotic, and clannish ; and, according to modern writers, they are still possessed of the same qualities.

While we have made some strictures on some of the views of such an eminent historian as Lord Macaulay, it must be borne in mind that we consider his faults as trifling in comparison with his merits. A noble contribution to anthropology his work doubtless is ; and, as an historical artist, he is entitled to rank among the first of all ages and nations.

We have dwelt more fully on the portions of the work which delineate the more Celtic districts of Britain, in order that the intermixture of the original race with the intrusive ones might be more distinctly traced and analysed. In no other historical work can the anthropologist find more suggestive and instructive matters than in Lord Macaulay's *History of England*.

HECTOR MAC LEAN.

ITALIAN ANTHROPOLOGY.*

As it is one of the objects of the *Anthropological Review* to collect and to diffuse, as extensively as possible, the contemporary literature of the grand science to which it is dedicated, it seems desirable to continue the announcements, however brief or imperfect, of foreign publications. We cannot afford to limit our knowledge to the productions of our own islands. On the contrary, light upon any of the multitudinous subjects of anthropology is most acceptable from every source whence it can come. The scientific men of Italy have recently made some important contributions. The first place must be conceded to the zealous Nicolucci, who so ably sustains the position of the Prichard of Italy.

Ancient Liguria may be said to be that region of the Peninsula which reached from Gaul to Etruria, extending along the shores of the Mediterranean Sea. But the Ligurian race has had more extensive limits; to Massilia and the mouths of the Rhone westwards, to the Maritime Alps northward, and to near the city of Pisa on the Arno southward. In the earliest times the Ligurians consisted of a number of wild tribes, rightly to be regarded as the most ancient inhabitants, or aborigines of these regions, whose origin could not be traced. Strabo and other ancient authorities speak decidedly of their distinctness from the Celts or Gauls. Their language is lost. Although much nearer home, the Romans found these brave tribes about as difficult to subject as those of Britain. And, like the latter, almost the only pages of history occupied by the Ligurians are those in which Livy relates the long-continued efforts of a succession of Roman armies to bring them to submission. For upwards of two hundred years different tribes offered vigorous resistance, and it was not till near the commencement of the Christian era that they were finally subdued.

The purport of the author's investigations, he tells us, is limited to the Ligurians, the most renowned among the oldest populations of Italy; to prove that it is probable this was the first people who dwelt on the Italian soil, and that, notwithstanding the revolution of so many ages, and the occurrence of so many and of such diverse vicissitudes, some remnant of the race still survives in their ancient seats,

* *La Stirpe Ligure in Italia, ne' tempi antichi e ne' moderni.* Per Giustignano Nicolucci. Napoli: 1864. 4to, pp. 87, con tavole vii.—The Ligurian Race in Italy, in Ancient and Modern Times.

and still preserves those characters and same natural attributes by which they were distinguished in the most remote ages. This is a noble design, and will add another to the numerous other such proofs of the permanency and indelibility of race.

It will be impossible to follow the author in his learned researches through the whole of the recondite course he has marked out. He treats, first, of the primitive populations of the west of Europe of the age of stone, a subject already familiar to his pen.* He assures us that these ancient people were generally distinguishable, according to the evidence of human crania found as well in Denmark as in Germany, as well as in Switzerland, France, and the British Isles, by the *brachycephalic* form of Retzius; namely, by that short, broad, as it were spherical cranial form, in which the transverse diameter stands in its relation to the longitudinal, as 4 or more is to 5, or, as 80 or more is to 100. The succeeding races of the bronze and iron periods are readily discriminated from these by the oval figure of their calvaria, in which the long diameter exceeds by a fifth or more the transverse, constituting the ovoid form of Prichard, and the *dolichocephalic* of Retzius. Still, in the bronze age, there are frequent evidences of brachycephalic skulls, which gradually diminish in number as we approach the iron period. And this could not be otherwise, since the countries of Europe conquered by the new races of the bronze and iron epochs, would be gradually thinned of their pristine inhabitants. Not all the conquered would submit to the yoke of the victors; many would go in search of other seats, or they would recover some spots not contaminated by the presence of the stranger. Those who were not absorbed by the new comers, and remained free from extraneous mixture, would preserve unchanged their original stamp; and still, even in our times, notwithstanding the lapse of so many ages, represent the types of the primitive races. Remnants of these races endure continually in the north and the centre of Europe, in the Finno-Ugrian family; remnants still exist in that group of people who dwell towards the point of conjunction of the Pyrenees and the Calabrian mountains, in France and in Spain, and in that tract of country named Liguria and Piedmont, which extends from the Var as far as the Macra, and from the Mediterranean up to the Ticino.

The next section of this well-argued treatise is entitled, "The Ligurians traced out by the aid of History and of Philology." This

* *Di alcune Armi ed Utensili in pietra, rinvenuti nella Provincie Meridionali dell' Italia, e della Popolazione ne' tempi antestorici della Penisola Italiana.* Napoli: 1863. 4to, con tav. ii. This work contains measurements of human crania found at a considerable depth at Torre della Maina and at Cadelbosco di Sopra, and also small figures of two of them.

division of the work is full of learned research, and contains an investigation of the names of districts, rivers, mountains, etc., which are referred to their roots and etymologies, and traced through ancient authors with much patience and ingenuity. This section may be passed over, as it constitutes a speciality for the study of those who have formed a considerable estimate of philology in solving obscure questions of origin. Its importance as a means of collecting the scattered rays of knowledge extant with regard to the ancient Ligurians, cannot be called in question.

The following section takes up the ancient Ligurian type, and endeavours to deduce it from antique medals and from Ligurian crania. It opens with a lamentation that, whilst the ancients, with one unanimous voice, have celebrated the intrepidity, the valour, and the marvellous endurance of the Ligurians, there remains no record of their physical conformation. From some mere expressions, it may be collected that they were of medium stature, of spare and robust constitution. Some cut off their hair, others allowed it to flow freely over their shoulders; whence the Ligurians were distinguished into the *tonsi* and the *capillati* or *comati*. By an ingenious argument, based on the assertions of Jornandés, Strabo and Tacitus, Dr. Nicolucci is enabled to affirm with some degree of confidence that they had black hair, or hair of a dark tint. He says, we have reason to consider that a brunette colour prevailed among the Liguri, with a not unfrequent disposition to curly hair. Although it has been the lot of Liguria to have no ancient monuments, we have some medals of Aquitania and of Spain, which have preserved the portraits of the indigeni expressing the national type. At least, those bearing legends in the obscure characters, which Boudard has shown are in the Basque or Euscarian language. The heads on these medals are generally held to be the true effigies of the persons whose names they bear. In those of the greatest number, there prevails a common type, which is not Greek, nor Phœnician, nor Celtic. They reveal a visage rather short, as it were quadrate, with prominent supraciliary arches; a nose almost always large; curled hair; and beard, where it exists, standing on end.

If from such scant materials we should be disposed to indicate the features by which the ancient Ligurians were distinguished, we might be able with reason to define them by their *medium stature, their spare and vigorous limbs, their brown tint, their thick black hair, their face more square than round, and their prominent supraciliary arches*. If it were attempted to deduce from the effigies on the medals the form of the crania of the persons represented, it would be a skull more round than oval, a short brachycephalic skull, a skull different

from that which is at the present day commonly met with in Spain, in France, and in the Italian population. But this deduction would be of small worth, if it could not be supported by other facts derived from ancient crania appertaining to the Ligurian race. Of these, the author has only three to bring forward.

These antique remains were found in the provinces of Modena and of Reggio, which were in the power of the Ligurian tribe *Friniati*, before the Etruscans could have had dominion there, or their successors, the Gaulish Boii and the Romans. Respecting the antiquity of these skulls, the author considers that he has already demonstrated, in his former Memoir before mentioned, "On the Stone Implements of Italy," that they appertain to the people who inhabited Italy during that portion of the stone age which adjoins the epoch of bronze. Hence he regards them as certainly relics of the oldest inhabitants of the country—the Ligurians. Two of the skulls were found, in 1862, in Torre della Maina, about ten miles from Modena, in a deposit termed there Maina, or Marniera, *i. e.*, marl beds. They were associated with quantities of charcoal and ashes, fragments of urns, with here and there bones of domestic animals, and chiefly the large antlers of deer; bones, teeth, and jaws of the horse, of the sheep, and of the wild boar. The third is in the anatomical museum of the University of Modena, and was met with at Cadelbosco di Sopra, five miles from Reggio, in 1837, in a stratum of black bog earth, at a depth of fifteen feet. The three skulls markedly differ as well from those of the modern inhabitants of the provinces of Modena and Reggio, as from the other Italians, with the exception of the Ligurians and the Piedmontese, to whose crania they are very similar.

The conformation of these skulls is brachycephalic. This is rendered very striking by the measurements given by Dr. Nicolucci, and the three first of the seven lithographic plates which accompany his Memoir, and which represent the skulls of their natural size. The first and least perfect of the two from Torre della Marna is the cranium of a woman, judged to be not more than from forty to forty-five years of age. The author has described this skull, as well as the others, very carefully, but he has omitted to mention the premature ossification of some extent of the extremities of the coronal suture, which has occasioned klinocephalism. The cephalic index of this skull rises to 90·5, or this is the proportion of its greatest breadth compared with its length, taken as 100. The second example from Torre della Maina is the skull of a young man of from twenty-five to thirty years of age. This is equally brachycephalic with the pre-

ceeding, as its cephalic index is 90·7. The cranium from Cadelbosco di Sopra is likewise brachycephalic, with an index of '85.

The author takes the opportunity in this place to speak of some Etruscan skulls referred to the brachycephalic type, which Retzius did not hesitate to regard as proper to the head of that race. This view has not been supported by the observations of Garbiglietti,* Von Baer,† Rudolph Wagner,‡ and Maggiorani;§ and the Etruscan skull figured in the fine edition of Cuvier's *Règne Animal*, published by his pupils, is also dolichocephalic.

Since the publication of this memoir, *La Stirpe Ligure*, the Etruscan cemetery at Marzabotto, near Bologna, has been very carefully excavated by Count Giovanni Gozzadini, and the results have been made known in a splendid volume by that learned and distinguished antiquary, *Di un antica Necropoli a Marzabotto nel Bolognese*. Folio, Bologna, 1865, 20 Tavole. In this cemetery a few human skulls were found, which were submitted to the investigation of Dr. Nicolucci, who has contributed a long letter or note upon these ancient crania to the volume just noticed. He first compared them with unquestionable Etruscan skulls, and found them to vary from these in a number of important characters. The horizontal circumference of the Etruscan skulls he found to be higher, namely, 529 millimètres, that of the Marzabotto crania only 487 millimètres. He next instituted a similar comparison of the latter with Celtic skulls, from which they also differed materially, and he was ultimately led to the conclusion that the crania found in the cemetery are not those of the Etruscans who first used this necropolis, but have been introduced at a much later period, and are the remains of the people who at present inhabit the Bolognese territory, belonging to the Italian family of Umbri. In this note Dr. Nicolucci gives the results of some careful measurements of the Marzabotto skulls, of true Etruscan skulls, of Celtic skulls, and of skulls of the Bolognese of the present day. The Marzabotto crania have a cephalic index of 79·6, and those of the Bolognese of '78, whereas the cephalic index of the Etruscan skulls was '76 only.

At a subsequent period, the eminent professor, Carl Vogt, addressed a letter to Signor B. Gastaldi upon some ancient human skulls found in Italy.|| In this communication Professor Vogt can scarcely have

* *Brevi Cenni Intorno ad un Cranio Etrusco*. 1841.

† *Ueber den Schädelbau der Rhätischen Romanen*. 1859.

‡ *Zologisch-Anthropologische Untersuchungen*. 1861. S. 13.

§ *Saggio di Studi Craniologici sull' Antica Stirpe Romana e sulla Etrusca*. 1858.

|| *Su alcuni antichi Cranii Umani rinvenuta in Italia*, Feb. 1866.

had before his eyes the epithet of "rash," applied to him by a recent English writer. He gives the results of his examination and measurement of about a dozen ancient crania found in Italy, comparing them with some others; but, in the course of this investigation, he appears somewhat to ignore the labours of previous observers who have had more abundant materials in their hands.

Professor Vogt in his letter to Gastaldi speaks of the cranium of the ancient Romans, but apparently in a somewhat doubtful manner, and refers to no other writers upon the subject, save Professors His and Rüttimeyer, the distinguished authors of the *Crania Helvetica*, who have embraced it under their "Hohberg type," and have, besides, given a profile and a vertical outline figure of the skull of the Roman Prætorian in the Blumenbach collection. This skull seems to have been scarcely long enough and narrow enough for the Professors' conclusions, hence he has thrown out a doubt upon its authenticity, and considered that it might be of barbarian Celtic origin. The Prætorian guards underwent many changes after their institution by Augustus, when they were chosen from the troops in Italy; but, except at a late period of the empire, they were of all troops the least likely to contain barbarian blood. The fine and perfect skull of V. L. ALEIVS admits of no doubt of its authenticity. It is dolichocephalic, like those of His and Rüttimeyer's Hohberg type, only not in so extreme a degree, and it agrees well with other ancient Roman crania. The cephalic index of Blumenbach's skull is .72, the mean of those of the Hohberg type is .70. The former ratio must be regarded to be confirmed by the observers whose estimates Professor Vogt has omitted to quote, unless there be a more exact conformity in crania than we have ever been able to discover. It is difficult to say positively what is the cephalic index of the ancient Roman skulls examined by Professor Carlo Maggiorani,* since it is probable that neither his anterior nor posterior transverse diameter represents the greatest breadth of the calvarium. The anterior is the longest, and by taking this to be the nearest indication of the greatest diameter of the calvarium, the mean cephalic index of the five skulls is .74. Of a series of four ancient Roman skulls engraved in the *Crania Britannica*, the mean cephalic index is .74. These materials give us good ground for concluding that the extreme length and narrowness of the Hohberg type of His and Rüttimeyer is not essential to the genuine ancient Roman skull, of which the Prætorian of Blumenbach may be, and probably is, a typical representative.

Professor Vogt goes on to assure us in this letter that the ancient

* *Saggio di Studii Craniologici*; and *Nuovo Saggio di Studii Craniologici. Sull' Antica Stirpe Romana e sulla Etrusca*. 1862.

Etruscan skull is brachycephalic, its mean cephalic index being $\cdot 82$, and proceeds to describe it at length.*

* As we have already noted, Retzius had previously classed the Etruscans among his brachycephali; but there was much evidence on the other side. This we shall get at best, and at the same time supply the missing links passed over by Professor Vogt, by briefly alluding to a recent publication of Dr. G. Nicolucci, the title of which is *Su i Crani invenuti nella Necropoli di Marzabotto e di Villanova nel Bolognese; Lettere del Cav. Dr. Giustiniano Nicolucci all' illustrissimo Sig. Conte Giovanni Gozzadini, Senatore del Regno*, 15 Settembre, 1866. This brochure contains a reprint of the author's former letter to the Count, with the table of measurements of the skulls, to which is added a second letter, in reply to Professor Vogt. In this last letter, Dr. Nicolucci informs us that he has found the true ancient Etruscan cranium, in the great majority of instances, to be sub-dolichocephalic and that its mean cephalic index does not exceed 76. He has deduced this proportion from the study of many Etruscan skulls; and he affirms that the results obtained by Von Baer, by Rudolph Wagner, and by his friends Garbiglietti and Maggiorani, are not different from this deduction, which has the support of Dr. Pruner-Bey also. The characters of the Etruscan cranium, he proposes to treat upon in a distinct work, on the Anthropology of Etruria, in which he will show that it differs from all other cranial forms in Italy. He adds, that Professor Vogt errs in attributing to Von Baer, and to His and Rüttimeyer, the recalling the Etruscan type into modern literature. On the contrary, before any of these observers had directed their attention to the subject, the learned but modest Cavaliere Antonio Garbiglietti had discovered in 1839, and had in 1841 described and figured, a beautiful Etruscan skull, which he had obtained with his own hands from a very ancient tomb at Veii. The author has not mentioned the title of Professor Garbiglietti's memoir, but we have already given it above. It may not be unworthy of notice, that this ancient Etruscan skull is the theme of a more recent memoir of Dr. Garbiglietti's. It presents, as far as we at present know, the only example among European races of that anomalous supplementary jugal bone, which has been occasionally observed among Oriental races. To this memoir we may hereafter direct attention. The Etruscan skull of Signor Garbiglietti is evidently not brachycephalic, as its length is 7.5 inches English. The next writer upon the subject of Etruscan crania was Carlo Maggiorani, at that time professor in Rome. His first memoir was published in that city in 1858; his subsequent memoir in 1862. We have already given the titles of these memoirs, and also the proportions of the Roman skulls described by Maggiorani. The mean cephalic index of the five Etruscan crania described appears to be 76.

It will not be necessary to follow Nicolucci in the subsequent part of his last letter. It may be sufficient to say, that he differs materially from Professor Carl Vogt respecting the crania discovered in the Etruscan cemeteries of Villanova and Marzabotto, and supports his former opinions concerning them by an appeal to the method for obtaining an approximate idea of the internal capacity of crania devised by Professor Paul Broca. It is not insignificant to note, that neither observer regards the skulls from the Etruscan cemetery at Marzabotto as of Etruscan origin. Vogt looks upon them as Ligurian; whilst Nicolucci reiterates his former view, that they are

Dr. Nicolucci confines his search for true Ligurians within the limits of Liguria proper and of Piedmont, in what are now named the Ancient Provinces, where the Ligurian type is preserved as it was in the most ancient times. The inhabitants living near the shores of the rivers which bound ancient Liguria have lost much of their native character, and the purity of their Ligurian blood is tarnished by foreign admixture. At the same time, upon the Alps and in the deep valleys of Piedmont they are so mingled with the Gallic type, that the limits of the two cannot be fixed; although in the Grisons, in ancient Rætia, in many of those valleys of difficult access, the Liguri still continue as if unchanged, and the crania of the alpine people offer at present the brachycephalic conformation, which Von Baer has carefully studied in skulls collected at Chur, or Coire.

After this lengthened exposition of Dr. Nicolucci's treatise, we shall not follow him closely in the next sections of the work. The sixth is entitled "The Races of Europe and the probable order of their Immigration," a section which, together with the following, on "The Aryan Conquest in Italy," affords as much light as is to be collected on the dark and speculative view that ancient European races are to be regarded as strangers and immigrants in this continent. After these succeeds a short section devoted to the examination of the question whether the Ligurians are the descendants of the African Lybians. Sig. Nicolucci here appeals forcibly and conclusively to craniological evidence. The skulls of some Kabyles, preserved in the Anatomical Cabinet at Modena, present a mean cephalic index of $\cdot 75$; another example in the hands of the writer yields a cephalic index of $\cdot 76$; four crania of Berbers afford a very similar testimony, for their mean cephalic index is 73 ; a series of skulls of Guanches, who are fancied by some to have been allied with the Lybians, give a mean cephalic index of not more than $\cdot 78$; whilst it must be recollected that Dr. Nicolucci's Ligurian race gives a cephalic index amounting to $\cdot 86$. This difference, without appealing to the absolutely different idioms, belonging to two distinct glossological families, the author regards as the most stringest confutation of the opinion which would derive the Iberians and the Ligurians from the African continent, and would populate Spain, Italy, and the South of France with a Lybian race.

identical with those of the Bolognese of the present day, and belong to the Italian family of the Umbri. Nicolucci concludes his second letter in these highly commendable terms: "To restore facts to their just value, and to give to them that interpretation which is believed to be most consentaneous with truth, is the business of those who devote themselves to the sacred culture of science; and I believe I have performed my duty, in expressing my opinion plainly and without reserve."

The concluding section of this learned and important work contains the author's deductions, which we shall give entire, with the terminal aspiration of an Italian patriot, in which he considers that he has demonstrated :

"I. The modern Ligurians to be the direct descendants of those Ligurians of antiquity, who, in ante-historic times, peopled not only Italy, but also parts of France and of Spain ;

"II. Them to be of an allied race to that of the other nations who inhabited Europe before the arrival of the Aryan people, a race distinguished by the brachycephalic character of the skull, and by those other natural qualities which are proper to the Turanian family ;

"III. The Aryan colonies coming into Italy, to have in part supplanted the more ancient inhabitants, and to be superposed over the indigenous races, whose type was scattered and was absorbed by the Aryan, which became the general type of the Peninsula.

"IV. But in Piedmont and in Liguria the old race kept itself predominant, hence the ancient type either was not at all or only slightly modified ; because, at this day, the brachycephalic cranium is still observable in the major part of the inhabitants of these provinces, preserved unchanged, and as it was at the most remote period.

"V. Notwithstanding the inhabitants of Piedmont and of Liguria, mingled with the rest of the inhabitants of the Peninsula, and bound to them by community of language, of religion, and of customs, have, for a long time, formed with them one single nation ; as all the great territory from the Alps to the sea hath formed from a remote period, and forms at present one sole and indivisible country."

J. B. D.

THE ROMAN AND THE CELT.*

HISTORY is a promise rather than a fulfilment, a fragment rather than a whole. It cannot well be otherwise; for it is simply a few scenes from a mighty drama, whose beginning is hidden in an unfathomable past, and whose end lies in the sublime remoteness of an unrevealed future. Science has successfully vindicated the vast eras of geology. Nobody now dreams that the earth began its existence yesterday. Palæontology can draw on unlimited periods for the gradual evolution of the successive forms of sentient life. But it is otherwise with history. It is expected to crowd its successive phases of civilisation into limited areas of time, easily measurable by the compasses of scholastic chronology. We are still haunted with the groundless idea, that we can mount to the origin of human culture, and trace its various stages of development to our own day. Till very recently, the great body even of the learned, believed in nothing but written history, their own history, based on Semitic traditions and classic authorities. Monumental records were scarcely appreciated, and true archæology had no existence, while philology was still encumbered with the grave misconceptions of a shallow pedantry. Nor have we yet fully emerged from this condition of things. The contracted ideas of the popular theology as embodied in its cosmogony, have yielded to the expansive influences of modern discovery, but its equally contracted and erroneous tuitions in reference to anthropology are still tyrannically prevalent. And this despotism of the theological school of thinkers is rather aggravated than softened by their special studies as classical scholars, which unconsciously induce the habit of practically regarding profane history as limited to the annals of the Greeks and Romans, or, at farthest, the nations known to us through their writers. To attempt to mount higher than Herodotus would once have been regarded as scarcely less impious than to doubt the credibility of Moses. "The Father of History" had set effectual limits to idle curiosity, and for anything beyond him, troublesome inquirers were gravely referred to the earlier pages of their Bible. Our studies in Sanscrit literature, and the comparatively recent discoveries in Egyptian Hieroglyphics and the cuneiform inscriptions, have slightly modified these comfortable assurances. Slowly and with much recalcitration, the educated public are beginning to understand that there is a learning outside the area of traditional European cul-

* *History of Julius Caesar*. London: Cassell, Petter, and Galpin. Vols. I and II.

ture, and that there is a history not yet written in orthodox books. And, of course, as an inevitable consequence, it is also beginning to be confessed that the old plumb-lines are somewhat deficient for fathoming the depths of primeval history.

We have been led into these reflections by a perusal of what is apparently to be the grandest biography of modern times, the life of the ancient by the modern Caesar, or at least "My Nephew." The two volumes in which the imperial penman has thus far given us the digest, not simply of his learning, but also of his experience in matters gubernatorial, are now before us, and we can judge in some measure, both of his qualifications and the character of the work which he has produced. Its primal recommendation consists in the fact that it bears, on nearly every page, the internal evidence of not being written by a mere closet scholar, but by a man well versed in the practice of statesmanship, and accustomed to weigh empires in the balance. Perhaps it is not too much to say that there are sentences in it which only a monarch familiar with the exercise of authority, at home in the use of supreme power, could have written. Whatever small assistance in the getting up of subsidiary portions may have been rendered to the august author by his court scribes, there is no question that both in the conception and execution of this extraordinary work, we trace a head that has framed decrees and a hand that has signed treaties. This is, perhaps, the highest praise we can bestow, and implies that we regard this life of one emperor by another as something almost unique in literature, for although monarchs have ere this occasionally condescended to authorship, they have not always written so royally as might have been, perhaps, expected, considering their opportunities and experiences. It is not, however, of the literary attainments or the statesmanly abilities whereof this work is the evidence, that we here purpose to speak. That will doubtless be done far more effectually by our contemporaries. It will be quite sufficient if we contemplate the production of the imperial mind from our own standpoint, that is in its relationship to some of the great race questions, with which it is the business of this journal to render its readers more or less familiar.

It is, no doubt, very proper for the general reader to regard history as simply a narrative of the rise and fall of nations and empires, but to the anthropologist it is also an exposition, although a very imperfect one, of the tidal movement of races. To him the eastern conquests of Alexander and the Greeks, and the western conquests of Caesar and the Romans, are evidences, not simply of the martial prowess and political power, but also of the racial supremacy and colonial expansion of the classic peoples at the period of their culmina-

tion. Ere they could have achieved so much, he knows that the Semites and Aryans of Asia must have sunk into a state of collapse, after their imperial splendour as Assyrians and Persians. And although he has but little history and imperfect monuments to guide him, he has no hesitation in concluding that a somewhat similar fate must have overtaken the Celts of Europe, ere the stern lords of the eternal city succeeded in planting their eagles on the Seine and the Thames. Now, however necessary it may be to base history on these larger views, it is, perhaps, scarcely fair to expect them in a biography, however strictly historical may be the character with whose career it endeavours to render us familiar. And let our subsequent remarks, therefore, on the life of Julius Cæsar be regarded rather as supplementary to, than critical of, the literary labour of the imperial penman of the Tuileries.

It is doubtful if we have even yet correctly defined the place of the classic peoples, either in history or anthropology. Till very recently, we do not seem to have known how much must have gone before them ere they could have existed. Deriving our knowledge of them from their own imperfect annals, we understood but little that was geographically beyond or chronologically before them. Philology has now revealed their lingual relationship to the great Aryan family, while a study of the principal schools of Hindoo philosophy, shows us that this relationship is not simply one of words, but also of thoughts. Nor has archæology failed to contribute to this enlargement of our ideas. We now know not only that there were "brave men before Agamemnon," but that there was a prehistoric cyclopean civilisation in Greece, Italy, and Asia Minor, whereof Tiryns and Mycenæ are the evidence, though they cannot render us back its minuter annals. We have discovered enough, however, to see that classic civilisation rested on the ruins of a preceding culture, whose antiquity antedates, not only the age of inscriptions, but in its rude beginning, even that of the hewn stone.

Was the classic man autochthonous, or was he induced colonially or otherwise, on a ruder aboriginal type? We suspect that this is but part of a larger question, the origin and age of the Caucasian race. Ever accumulating data seem to indicate with continually increasing force, that in accordance with the general evidence of palæontology, the ruder and lower preceded the finer and higher types; and that the Caucasian is not only the noblest, but the latest variety of man. It is still, however, an open question whether the Semitic or the Aryan division be the older of the two. Without attempting here to settle this still disputable point, we would suggest for the future consideration of anthropologists, the possibility that they may be derived

from different sources, the former from the Negroid and dolichocephalic type of the south, and the latter from the Turanian and brachycephalic types of the north. The fact of most interest to us in this connection is, that the Classic peoples were at the line of junction and interaction between these two great races. The Asiatic, that is Ionian Greek, came into direct contact with the Semitic Jew and Phœnician. Of this we have the present effect in Christianity, that magnificent bequest of the Oriental conquests and colonisation of the Classic peoples during the historical period. But is it to be supposed that the action and reaction of Semitic faith and Aryan intellects, commenced at this comparatively late period in human affairs? Have we not, on the contrary, reason to believe, even from tradition, in a corresponding and prehistoric cycle of events, whereof the myth of Cadmus, and perhaps of Jason, are faint echoes, and of which the dethronement of Saturn was a remote consequence. Inherently and essentially, however, the classic man was obviously of Aryan lineage, and we may add, judging both by his physical type and mental constitution, of nearly pure blood. In other words, he was largely devoid of that Turanian taint which so perceptibly attaches to most of the mingled populations of modern Europe.

But while it is quite proper to regard the classic peoples as one, when contemplated from without, they are, as we all know, historically, and we may add racially, separable into two well-marked divisions, the Greeks and Romans. And while from geographical position it was inevitable that the former should come into more immediate contact with the Semites and Persian Aryans, it was equally inevitable that the latter should interact with the Celts and Teutons. Both the physical type and mental constitution of the Roman, indicate that he was not so purely classical as the Greek, that is, he was neither so harmonious or intellectual. Primarily, he was neither poet nor artist, but warrior and legislator. It is doubtful if he was of such pure blood as the Greek. His cranial contour indicates a powerful Teutonic admixture, as if Alaric and his Goths were only a second edition of some prehistoric invasion from the north. Morally, he was nobler and grander than the Greek, susceptible to higher motives, of more exalted principles, and above all, of a stronger and more persistent will. Intellectually, he was massive rather than brilliant, and endowed with talent as contradistinguished from genius. He was a born statesman, and conserved by policy what he had acquired by arms. He did not subdue the world in a few brilliant campaigns under one Alexander, but marching steadily to supreme power through centuries of conquest, he held the nations in his giant grasp till both their laws and language became unalterably moulded upon his own, so that to this

day Europe bears indelible traces of the ironhanded empress of the West.

The mission of Rome was the summation of ancient civilisation. After her came the flood of race, religion, and policy. To understand the place of Rome, we must, therefore, know what ancient civilisation had achieved. From what has been already said, the reader will be at no loss to understand that we regard it as altogether underestimated. It was older in date and higher in character than even the learned are yet prepared to believe. Already "Egypt's place in history" is admitted to be more remote than was formerly supposed possible; while Nineveh, Babylon, India, and China are relegated to a position, not simply determined by the accepted chronology of the deluge. But while our ideas are being thus rapidly enlarged in relation to the great oriental empires of antiquity, there is another grave possibility looming into view, that does not meet with such ready acceptance, we allude to the prehistoric civilisation of Europe. There, in addition to archæology, we want the help of anthropology. Of Etrurian culture we have undeniable evidence. Of Cyclopean civilisation there are the truly Titanic remains. But it is still lawful to speak of the Celts as "painted savages," and to treat of the Germans as people who always came out of their rude forests. We have already glanced at this subject in some observations on the Roman and Teuton, and what we now purpose is to make a few remarks on the possible prehistoric civilisation of the Celt.

Anthropologists scarcely need to be reminded that humanity is not a democracy, but a hierarchy, ascending in successive gradations from the lowest Negroid to the highest Caucasian type, from the man of muscle to the man of mind, from the creature of appetite to the being of thought; and the grandest problem yet awaiting solution is the due relegation of each great family to its proper place in the ethnic scale. Of the relative place of the Negro, the Turanian, and the Caucasian, there can be no doubt; the order of these primary divisions may be regarded as settled. But when we come to their minute subdivisions, especially those of the last, opinions differ, a satisfactory indication that our data are insufficient, or that our principles are unsettled. We all admit that the Foulah and the Kafir are superior to the Negro of the coast of Guinea; nor do we deny that the Turcoman and the Finn stand higher in the ethnic scale than the Samoyede and the Lapp. And perhaps one reason why we see all this so clearly is, that we are on the outside of these races, so that we have no feelings of jealousy to disturb our perceptions and warp our judgment. But it is otherwise with our own more exalted type. Here the rival claims of Semite and Aryan, of Greek,

Roman, Teuton, and Celt, afford a never-ending subject of controversy, in which it is to be feared passion and prejudice have but too often supplied the place of fact and argument.

Let us not, however, be too hard upon the combatants in this intellectual warfare. Much of the confusion which reigns in their contest is inevitable. In the language of Comte, anthropology is only now in the process of emergence from its theological phase, and is certainly very far from having attained to the positive stage of development. Its facts are inadequate, and, as we have said, its principles are unsettled, and, as a necessary result, the conclusions of its professors are regarded as little other than individual opinions, from which, whoso pleases, may differ at his discretion. We do not make these statements to discourage our fellow-labourers. On the contrary, such a state of things, while it may oppress the weak, will only stimulate the strong, by showing them how much yet remains to be accomplished, and consequently what opportunities for usefulness are still presented to their choice. It is this, indeed, which renders the study of anthropology so especially attractive to a vigorously constituted mind. We are called upon to work at the foundations, leaving to after ages the comparatively easy task of adding to the superstructure.

The speculation which regards humanity as the collective or grand man, is not perhaps altogether fanciful or ungrounded. It, at all events, has the recommendation of comprehensiveness, and enables us the more readily to arrange subordinate topics as parts of a large whole. Thus contemplated, then, we may say that the Negroid races represent the vascular, the Turanian the muscular, and the Caucasian the nervous portion of this mundane structure. Were we inclined to enlarge our comparison by taking in a wider, and therefore more diversified range of vitality, we would say that the Negro represents the vegetative, the Turanian the animal, and the Caucasian the more purely human attributes of this collective organism. We shall not perhaps greatly err, if we speak of these three great types as successive stages of advancement from alimentation and reproduction to respiration and cerebration. Fundamentally and primarily, it is a question of more or less nerve, which determines all that is subordinate to it. We have been induced to make this statement, although to some who have read previous communications it may sound like a repetition, because if the principles upon which it is based be sound, they must prove applicable to the minor as well as the major divisions of humanity, and so perhaps may help us to arrive at somewhat more definite conclusions in reference to the former.

We are here advancing upon rather disputable ground. Zoology has managed to arrange its classes, orders, genera, and species in a manner sufficiently convenient for all the purposes of description and reference, and on principles satisfactory to most, if not to all, students of natural history. But it is yet, alas, quite otherwise with anthropology. Here we have not yet determined authoritatively whether there be more than varieties. So that while some anthropologists, like Mr. Luke Burke, regard the *genus homo* as a new kingdom in nature, with of course all its subdivisions, at least in a germinal condition, there are others, jealous of the affirmation even of different species. This diversity of opinion is no doubt, in large part, due to the imperfection of the science, but it may be also in some measure due to the merely incipient and embryonic stage of its subject matter. Man, as the latest advent on the globe, is presumably at the farthest remove from his ulterior possibilities. While indubitably the highest of all organic types, he yet manifests unmistakable traces of ethnic immaturity; and among other concomitants of this condition of things is, probably, the rather imperfect demarcation of his special diversities. But to whatever cause it may be attributed, let us begin with the rather humiliating confession, that anthropology, both in its classification and terminology, is still in a miserably confused and almost chaotic condition. So much so is this the case, that scarcely any two writers use the word "race" in exactly the same sense, nor indeed does any one author employ it at all times with the same signification. Thus, for example, we speak with equal facility of the Negro and the Caucasian, the Aryan and the Semite, the Teuton and the Celt, as constituting different "races," while, in reality, the two last are but subdivisions of the Aryan, as the latter is but a branch of the great Caucasian stem. We do not make these observations by way of urging a precipitate attempt at classification, which in the present state of our knowledge would be premature, but simply as a means of guarding the reader, as far as possible, against misconception, from the rigid interpretation of terms, necessarily used with a latitude anything but conducive to the precision demanded in the language of a fully matured science.

One of the profoundest observations of Swedenborg, who if he had not been so noted as a mystic, might have been more famous as a philosopher, was that the great is seen in the small, as, conversely, the small may be seen in the great. So, perhaps, in the present case, we may throw some additional light on the minute subdivisions of the principal races by studying the relation of the latter to each other, not despising, indeed, the hints which we may obtain from the still wider fields of comparative anatomy and animal physiology,

more especially as these are enlarged by the data obtainable from the structure and presumable habits of extinct species. It is not, indeed, until we contemplate man by the light derivable from a wider area than his own—that is, until we view him in relation to sentient life as a whole—that we begin to thoroughly understand him, or estimate aright his true position as the crowning glory of organic existence; for man is but the realised result of ascension, thus far, in the scale of telluric being. To this, as an effect, has the earth attained in her attempted production of form and function. With the noblest individualities in the highest races, we sum up nature's power *then* and *now*. Thus far has she prevailed—and no farther.

Now, by a comparison of the lower with the higher types, whether we proceed by classes or orders, it will be found that nature has been moving in a definite direction, aiming, if we may so say, at a result, and steadily, or at least persistently, approaching it through successive stages. She has not only been advancing towards specialisation, but also centralisation; the former being indeed not only a necessary concomitant, but, in a certain sense, an effect of the latter. Thus, man is not only the most specialised, but the most centralised being yet developed on the earth, the one on whom the brain has attained to the highest complexity and the greatest power. Indeed, Owen's fourfold division of the mammalia into Archencephala, Gyrencephala, Lissancephala, and Lycencephala, or, to give examples, into man, lion, hare, or kangaroo, proceeds on a recognition of the same principle. So, again, if, enlarging our view, we take in the entire range of the vertebrata, we shall find a regularly ascending series, not only a specialisation, but in centralisation, from fishes to reptiles, and from the latter, through birds, up to mammals. Nay, if we embrace the entire animal kingdom, from the radiata, up through the mollusca and articulata, to the vertebrata, we shall find the same tendency manifesting itself. But to return to the last, with which we are more immediately concerned, it will be found that this tendency to centralisation in the structure and functions of the nervous system, eventuating, or rather consisting in increased cerebation, is accompanied also by a corresponding, and probably proportionate change in the relative form and importance of other functions. Thus, as the brain increases in power, the thoracic tend to predominate over the abdominal viscera, so that cerebation and respiration become of more, and nutrition and reproduction of less, importance in the animal economy. Fishes are the most prolific and the most voracious of all the vertebrates, while their cerebation and respiration are at the minimum.

Descending, however, from these perhaps rather vague generalisa-

tions, let us apply some of the principles involved in them to the matter more immediately in hand, in illustration of the order and relative position of races. And here we are at once made painfully conscious of an admitted deficiency in anthropological science; we allude to its comparative anatomy. We do know something of the structure of various species of animals, but what do we know of the visceral and other peculiarities of the various types of men? With the exception of the facts recently furnished to us by Dr. Pruner-Bey in reference to the Negro, and some others by Baron Larrey, as to the Arab, we may say almost nothing. From the former we learn, as might be expected, that the liver of the Negro is much larger in proportion to his lungs than that of the Caucasian, which is only saying in other words that he is more foetal than the higher type, as his cranial, facial, and entire osseous structure would clearly indicate. From the latter we learn that the Arab is the very antithesis of all this, and in the disposition of his viscera, and the elasticity and play of his muscles, is superior even to the European. But for the remaining races and varieties we are thrown back, for the most part, upon external configuration and those indications of function which we find in the established and traditional habits of different peoples.

But before attempting to proceed with such an application, it is well to guard ourselves against a possible source of error in the examination of data. We allude to the necessity which obviously exists for the periodic baptism of the nervous races by their muscular correlates, devoid of which they sink into ethnic effeteness from overaction and its consequent exhaustion. This was the condition of the classic and Celtic races at the period of the Gothic conquest, which no doubt took place in strict obedience to law, as the appointed means for their renewal. Now, it is from their ignorance of this law that most writers regard the Celtic-speaking peoples of these islands as the only true Celts remaining among us, whereas they are simply the imperfectly baptised remnant of the old or effete type of the race. Thus it is not the wiry little Connaughtman who is the truest representative of the Irish Celt, but the well baptised Irishman of the Pale or of Ulster. In fact, the radical defect of Ireland, the ethnic source of the manifold evils under which she labours, is the still imperfect baptism of the Celtic by a superincumbent Teutonic population. She wants racial renewal. So the best representative of the British Celt is not the little Cardiganshire peasant, with his Amazonian wife—the feminine element always tends to preponderate at the decline of a race,—but the normal Englishman, the well-amalgated result of Roman, Saxon, Scandinavian, and Norman infusion. He is the re-

habilitated Celt—in the process of resurrection. So the best type of the Gaul is not the native of Brittany, but the Frenchman of Paris—not the diminutive citizen of the South, but the vigorous and comparatively stalwart man of the North, with plenty of German blood in his veins. We must not confound purity of race with exhaustion. The German is all the better for an occasional Slavonic admixture, and the Spaniard is periodically recuperated, not merely by a Gothic immigration from the North, but a Moorish conquest from the South, the former being needed by the Celtic, and the latter by the Iberian element in the Peninsula.

From what has been said, the reader will be at no loss to understand that we regard the Celtic race (when effectually baptised and regenerated) as inherently and essentially superior to the Teutonic, as the latter is higher than the Slavonic; and, we may add, as the last is superior to the Tartar and the Tartar to the Mongol. From the east of Asia to the west of Europe, throughout the northern temperate latitudes, it is a continual ascent in the scale of being, a march from the partially animal to the truly human plane of existence. In the lower stages, from Mongolia to Teutonia, this will no doubt be readily admitted. But a fair and unprejudiced application of the principles, which induce us to regard the Teuton as the highest of all the muscular races, as, in truth, the Caucasian representative of muscular man, must, of necessity, land us in the conclusion that the Celt is unquestionably his racial superior—in fact, his nervous correlate. He has a higher nervous development, and, as a consequence, more intense cerebral action, with respiration more preponderant over alimentation; and, as an accompaniment of this, he has a more delicately organised physique, and a mental susceptibility, immeasurably more acute. When effete, he becomes diminutive in stature, and excitable rather than energetic in mind. He wants weight and volume of being; but when these have been duly supplied, as they have been in the case of the English and the greater part of the Scotch, you have Teutonic power put into action by Celtic force, and in favourable individualities, like Shakespeare, Milton, and Byron, may combine the refinement, susceptibility, intensity, and taste of the latter, with the breadth, grandeur, and masculine vigour of the former. Were this the place, it would not indeed be difficult to psychologically dissect the mental constitution of our men of genius, and point out the special racial source of their respective qualities. Suffice it here, that Shakespeare is the highest example extant of the perfectly matured, and therefore harmonised, blending of Celt and Teuton; in other words, he is thoroughly baptised, and so completely rehabilitated Celt. Let it suffice, however, for the present, that we

simply affirm the superior quality of the Celtic race ; the question of relative power we will leave for decision at a later stage of the inquiry.

We have hitherto spoken only of the baptism of the superior by the inferior races for the purpose of physical invigoration—the great ethnic event of the last two thousand years. But action and reaction are always equal, even between Iran and Turan. If the nervous races require an occasional accession of bone and muscle, the muscular races, conversely, demand a periodic innervation—an infusion of fire—to save them from sinking under their constitutional phlegm and inertia. Conquest and colonisation are not always Turanian and Teutonic. They are sometimes Classic, as was evidenced under both the Greeks and Romans, and sometimes Celtic, as we see under the French and British, but more especially the latter, to say nothing of similar movements farther east under the Saracen, in comparatively modern and the Assyrian in more ancient times. Nay, in the memory of living men, did not the Corsican lead his victorious Gauls, not only into Germany, but through it, into the very heart of far Sarmatia? And are we to suppose that this was an exceptional fact in history ; that it and the like of it never occurred before? Such a conclusion would indeed show us to be but superficial students of the past, and utterly incompetent to the interpretation of its remoter chronicles. We may be quite certain that in this last age of the world, and on the well-worn track from Britain to India, we see nothing but repeating cycles, ever enlarging in their area and deepening in their effects, on the law of the epicycle, but still repeating. Of course written history makes but the faintest allusion to these earlier cycles, for the simple reason that they were transacted ere it was composed. But geographical names and ethnic facts, to say nothing of mythology and tradition, combine to indicate the prehistoric presence of Celtic peoples in much of Germany if not Scandinavia, in that remote era, when western Europe, from Denmark to Spain, was, if not wholly, at least predominantly, Celtic. The truth is, that as the Celt without the Teuton becomes wiredrawn and exhausted, so the Teuton without the Celt becomes lymphatic and inert, degenerating like an uncultured plant, to the wild Turanian type, which probably constitutes his remote ethnic root ; so, in a similar manner, the Slavon is sometimes conquered by the Tartar, and occasionally, as at present under Russia, subdued and rules him in return.

In an inquiry like the present, where so much new ground has to be trodden, and so many disputed questions have to be approximately settled, it will be well to avail ourselves of all possible aid in their attempted solution. As an additional means, then, of enabling

us to decide on the relative grade of the superior nervous races, let us look at the rank of their inferior and muscular correlates, with which, from geographical position or other causes, they are more nearly associated, and to whose reaction, in periods of ethnic exhaustion, they are more especially subjected. And here we are again reminded of the racial superiority of the Celts. To begin, then, with these. They are placed in the extreme west of Europe, at the farthest possible remove from the Turanians of Eastern Asia. Their proper muscular correlates are the Teutons, and when subjected to conquest from the south, it is by the classic Romans. It is doubtful if even the Slavons ever reached them except by infiltration through the Germans and Scandinavians, while judging by the later and therefore historic career of Attila, Ghengis Khan and Tamerlane, neither Tartar nor Mongol proper, ever prevailed to penetrate so far into the sacred realm of Iran. In Spain and perhaps Southern France they have been exposed to the inroads of Moorish but still Caucasian conquest. Surely a race so especially protected by position from direct contact with either the ruder Turanian or Negroid element, and whose successive racial baptisms have thus always been effected by comparatively pure Caucasian tribes, must, from this circumstance alone, have preserved a purity of blood all but unique. But is not the fact of their being so placed also indicative of a primordial superiority, as if, so to speak, the Celtic area were the highest in the world, from whence, by successive ethnic planes of descent, humanity ultimately arrives at its simply material type.

We are aware that to this very flattering, though rather sweeping conclusion, the scholar will cite his favourite Greeks and Romans, but more especially the former, as an exception; and, historically speaking, he is right in regarding them as having attained to the culminating point, hitherto, of intellectual manifestation. But we should remember that the prehistoric cycle of Celtic culture corresponds chronologically to their Cyclopean age, and that the present epicyle is, we have reason to believe, only at its initial stage, more especially in Britain, the (oceanic) Rome of the future.

But leaving this aspect of the question for the present, let us return to that branch of our subject-matter more immediately under consideration, namely, racial correlation as indicative of ethnic rank. That the Classic is one of the specially intellectual races, and if not the very highest, at least next in order, cannot for a moment be doubted. But let us pursue our inquiry. Italy, within the historic period, has been conquered and colonised by the Teutons, and at least invaded by the Celts, who in some of its subalpine provinces are, if not absolutely indigenous, yet of prehistoric antiquity. And as

medieval Italy owed her regeneration to an infusion of the Gothic blood of her conquerors, so from their cranial type and mental constitution, we have reason to believe that the Romans were Italians quite recently baptised by transalpine immigration, and thus mounting in the process of resurrection to the very heights of mundane empire. From Dalmatia and Lower Austria a Slavonic element may have occasionally and exceptionally percolated, but as a rule the Celt and Teuton are the appointed baptisers of the effete Italian. The wars with Carthage and some Saracenic inroads indicate, that like all the Mediterranean peoples of Southern Europe, the Italians may at remote intervals have been subjected to more or less of reaction from Northern Africa. Their racial correlates, however, are all Caucasian, and that, too, as in the case of the Celts, of exalted type.

But it is otherwise with the Greeks; they interact with the Slavon, and are subject to the invasion and occupation of the Turcoman. And here a grave question arises, whether we have not greatly undervalued both these races, but more especially the former. In this connection, let us not forget the very important and significant philological fact, that Sanscrit finds its nearest lingual relative, not in Greek or Latin, but in the rude and despised dialect of the uncultured Lithuanian peasant. Neither is it unimportant from the anthropological standpoint, that the Russian church belongs to the Greek communion and was the result of Greek missions, many of its clergy being still of undoubted Hellenic descent. No wonder the Muscovite tends, as by a racial inspiration, to Constantinople; he goes there to be Hellenised as the Goth did to Rome to be Latinised. The baptismal speciality of the Greek, however, as contrasted with European peoples placed farther west, consists in the fact that he is subject to invasion and permanent occupation by a race of decidedly Turanian stock, a fate he shares in conjunction with the Slavon. We suspect however that this is, in a sense, exceptional; that is, it occurs not periodically, by the law of national action and reaction, but only at those long distant and epochal intervals, when as at the collapse of classic civilisation there is a *mundane* movement that precipitates the muscular on the nervous races from India to Britain, and under which the Aryans and Semites of Asia also of necessity succumbed. And as a counterpoise to this, we have reason to believe that the Hellenes have, at other periods, been invigorated, like the Italians and Celts, by a direct Teutonic colonisation. Of this probably we have an ethnic record in the *Iliad*. Achilles is a Scandinavian Jarl; Ajax is a well-fed, ponderous and stupid German Baron; while Agamemnon has many of the moral qualities, at least, of an exalted Gothic king. In Ulysses, on the other hand, in virtue, perhaps, of his insular isolation,

we have the subtlety and cunning of the primæval Greek (Pelægian?), a remnant of the ancient leaders of the then vanished age of Cyclopean civilisation; that civilisation, we may remark in passing, we regard as predominantly the effect of a prehistoric *Celtic* conquest of South-Eastern Europe, while, what we know more immediately as classic civilisation, was due to that Teutonic colonisation, of which, as we have said, the racial effects are so vividly portrayed to us in the Homeric poems.

The Greek, however, holds another racial relationship, in virtue of his eastern position, and consequent proximity to the Caucasians of Asia. If, in periods of especial collapse, he is liable to the inroads of the brutal Tartar, he is also exposed to the refining influence of the Aryan, and the exalting power of the Semite. The Ionic school of philosophy in earlier and the Alexandrian in later ages, to say nothing of the system of Pythagoras, afford ample evidence of the susceptibility of Grecian intellect to the influence of Oriental ideas. But the most notable and convincing instance of the profound and peculiar relation which the Hellenic holds to the Oriental mind, is afforded by the history of Christianity, both in its origin and its diffusion. Arising from the interfusion of Greek philosophy and Judaic theology, its first impingement on Europe was through Hellas, while its sacred records were composed and still exist in the Greek tongue. Is it from this eastern source that the Greek obtained his metaphysical subtlety and logical acumen, and that tendency to refined and profound philosophic speculation, whereby he was differentiated, not only from the ancient Roman, but also the modern Italian?

From the foregoing survey of the racial correlates of the Classic peoples, it is obvious that they, too, like the Celts, are well protected from a direct Turanian invasion under ordinary circumstances; but the fact that both the Asiatic and European Greeks have been for centuries subjected to the Turkish yoke, indicates that they are less favourably situated in this respect than the more westerly divisions of the Caucasian race. And here we obtain the glimpse of a great principle, which may perhaps help to guide us in this investigation of an ethnic labyrinth. If we glance at the muscular races from West to East, from the Teuton, through the Slavon and Tartar, to the Mongol proper, we shall find a gradually diminishing refinement of type, a descent by successive stages, from the high-caste Scandinavian on the Atlantic to the flat-faced nomad on the Pacific. But if this be so with the baptisers, do not the orderly and generally harmonic arrangements of nature suggest the probability, if not necessity, of a corresponding condition in their nervous correlates, from whom, in positive ages, they are to receive nerve and intellect, and to whom, in

periods of political decay and organic exhaustion, they are destined to communicate corporeal strength and material vigour? From such data, and by such reasoning, it is obvious that we should arrive at the conclusion that Europe, as a whole, is a higher ethnic area than Asia, and that the west of Europe is higher than the east; and lastly, that the Celtic is the highest, because the best protected and the most nobly related of all the intellectual types, from India to Britain. We would not be understood as pushing this conclusion too far, or estimating it beyond its real worth, as a suggestion for further inquiry, and a hint to future speculation.

But it is time that we should return to the more especial subject-matter of the present paper, from which, however, we trust the foregoing remarks will not be considered a needless digression. And first as to the Roman. He was not a (modern) Italian; that is, he was not a pure ethnic product of the Italic area; he was not of that type, mental or physical, to which the people of the peninsula ever gravitate, after full recovery from a racial baptism. He was too strong and too coarse, too harsh and too angular, too stern and determined, too calm and self-possessed, too osseous and too muscular, for the lineal descendant of a perfectly classic type. Neither was he of this type, crossed by another of yet greater nervous refinement and sensibility, like the Celtic. He errs, if we may so say, on the side of muscularity. His alien progenitors were either Teutons or Moors. We incline to the former, though it is possible there was a dash of the latter. His character and cranial contour present many decidedly Teutonic elements. He was cautious in the formation of plans, but persistent in their execution. Though stern to the verge of cruelty, he was fundamentally just. Till vitiated by the possession of empire, he entertained a profound respect for women; and the Roman matron of the republic was the highest model of domestic virtue and excellence that heathenism has bequeathed to us. He was great as a warrior, he was still greater as a legislator. He was devout, yet not superstitious. He was solid rather than brilliant, and sound rather than subtle in intellect. He lacked suppleness, that especial characteristic of the modern Italian; but he supplemented this deficiency by his iron will. He was neither æsthetic nor literary by natural proclivity, being pre-eminently a soldier and a statesman. His faculty was for the field and the senate, with an occasional condescension to the forum; but his appearance in literature was late, and too obviously the result of Greek culture, to allow us to regard it as in any respect spontaneous. The elder Cato was right as regarded the rhetoricians, but fate was too strong both for him and the republic.

We are quite in the dark about prehistoric Italy. Like Greece, it

was Cyclopean. But what was that? What definite image can we form of the men who piled the massive walls of Norba? What language did they speak, what arts had they mastered, what power did they exercise? Above all, whence did they come, and what bequest did they leave to posterity? To call them Pelasgi, is simply to put a name in place of a fact. We are in nowise helped, but rather hindered, by such a procedure. Of one thing we are certain, they left us the SITE of Classic civilisation. Such a sequence cannot be altogether devoid of significance. The rudeness of their structures indicates that they preceded the Etruscans, as these antedated the Romans. As already hinted, our *conjecture*, and it is nothing more, points to Classic aborigines dominated by Celtic immigrants, in that far-off movement, when primæval civilisation was moving eastwards from its western source in the high ethnic area of Europe, towards the warmer latitudes and softer races of Southern Asia, taking Italy and Greece in its way, as it did at a later, and therefore historic, age, on its return.

But who, or rather what, were the Etruscans? And we reply, judging by the predominant character of their art, a fundamentally Classic people, but, judging by their physical type, with a decidedly alien baptism. Descending from the Rætian Alps, crossing the Po, and conquering Tuscany, short, thick-set, broad-shouldered, round-limbed, heavy-built men, with large heads and respectable corporations, implying vigorous cerebration combined with a sound digestion, have we not here the indications of a Czech or Slavonic element? Shall we say, in modern language, a Bohemian and Croatian immigration, the prehistoric foreshadowment of long subsequent Austrian occupation! Was not Count Cavour a modern reproduction of this type, which also reappears to a certain extent, though with a stronger dash of the Greco-Roman element, in the figure of the elder Napoleon? Nay, was not the Roman himself, in part, an ethnic result of this descent from the Rætian Alps; that is, had he not Etruscan blood in his veins, as well as Etruscan laws in his political constitution? Was not Latium the border territory of the (Dorian) Greeks of Southern Italy, and was not Rome its frontier fortress on the Tiber? We may depend upon it that Etruscan aggression did not begin with Numa, though it may have ended with Tarquin; and, had we the early annals of Alba Longa, we should probably discover this.

And thus, then, we are brought to the great problem of the Latian aborigines. Dorian Greeks, as we have said, by their language, semi-Etruscans by their laws, and yet, in part at least, Teutons by their mental constitution. Though, of course, beneath all this, as the stock to be grafted on, they were Italians, in the same sense in which

Englishmen are Britons. And we may remark here, that the Romans held the same ethnic relation to the Greeks, which the English do to the French; that is, they were fundamentally of the same Classic type, but with a larger alien and invigorating element, just as the modern Briton is stronger than the Gaul, because he was more effectually baptised at the great Teutonic invasion. But of this more hereafter.

The rise of Rome to imperial supremacy was not an accident. It was due to a mundane movement. Empire and civilisation, in their north-western march, having reached Greece, and eventuated in the conquests of Alexander and the rule of his successors, were now passing into Italy, and settling on the central town and central race of that peninsula. It was simply the second and western phase of Classic development, and, from the mundane stand-point, may be regarded as one with that of Greece. In a sense, Classic and even Mediterranean civilisation culminated in Rome, the wealthy heiress of the total past. The fact, however, that the great political and ecclesiastical mission of Rome tended westward, as that of Greece did eastward, would indicate that her principal racial correlates must lie in the same direction, and so points unmistakably to prehistoric Celtic and Teutonic baptisms, as the ethnic preparation for her after greatness.

We have purposely mentioned the ecclesiastical mission of Rome. As Protestants we may wish to ignore this, but as anthropologists we cannot consent so to falsify history by the sin of omission. Fourteen centuries of sanctity and pontifical supremacy cannot be an exceptional phenomenon. It must be due to the operation of a law and to the presence of forces of a very permanent character. Rome is unquestionably one of the sacred cities of the world. Now the question is, can such sites be *made*. Do they not antedate history, and place even tradition itself at fault. The faith of Islam did not *make* Mecca sacred. It *found* it so. It was not Judaism that sanctified Jerusalem. Melchisedec, King of Salem, received tithes even of so exalted a character as Abraham, and this too obviously in virtue of his pontifical supremacy. It is a most mistaken idea that the union of sacerdotal and regal functions in one person is a comparatively modern invention. On the contrary, it is one of the oldest arrangements with which history renders us conversant. In a sense, Rome has always been ruled by a Pontifex Maximus. Before the Popes it was the Emperors who bore this title. Is not Roma Rama, one of the great Aryan incarnations; and is not Rome still the highplace for the worship of the great Semitic incarnation? To what, then, do our remarks tend? Why to the rather heterodox conclusion that the political Rome of history arose

on the ruins of a prehistoric and sacred Rome, and hence the *cloaca maxima* and other archaeological puzzles, which in reality belong not to the time of the kings, but of their pontiff predecessors in yet remoter ages. Again let it be distinctly understood that we throw this out simply as a suggestion for further consideration.

But to return to the more immediate subject-matter of the present paper. Despite the apparently exceptional, because eastern, direction of Alexander's conquests, civilisation and power were marching steadily north-westward during the entire period of classic supremacy. This was the real direction of the tidal movement, the "set" of the main current to which Macedonian aggression in earlier, and Constantinopolitan effeteness in later, ages were merely counter-eddies. Let us distinctly understand that in her eastern dominions, Rome simply entered upon the inheritance of Grecian conquest, where her supremacy to the last was political, not moral or intellectual, so that she never superseded the language of her predecessor, the Byzantine empire, like its church, being in fact essentially Hellenic not Latin. Hence its slow decline was inevitable, ethnic vitality having for the time deserted the Grecian for a more western area, the appropriate sphere of Latin conquest and colonisation. Hence also the separation between the Papacy and the Patriarchate, and the superiority in power and influence of the former to the latter. Thus, then, we are brought to the second division of our subject, the Celt, as subject and successor to the Roman, or rather to the classic Græco-Roman peoples as a whole.

The idea of conquest and colonisation from the south seems alien to our established habits of thought. To listen to ordinary historians it might be supposed that the Gothic immigration was the only ethnic movement of any importance which had ever taken place. It seems to be forgotten that it was preceded by the extensive colonial operations of Rome, the effect of which is still lingually and perhaps racially distinguishable over large tracts of her transalpine territory, Spain and France being still in a sense, like Italy, the abode of Latin nations, while even Britain is not wholly free from the effects of Roman occupation. Whether conquest and colonisation are to proceed from the north or the south, the east or the west, depends on circumstances. Rome, as the imperial representative of the mundane tendencies of her era, marched westward till her eagles rested on the Atlantic seaboard from the Pillars of Hercules to the South of Scotland, thus completing that great movement which had commenced so long previously on the plain of Shinar. Not that Roman occupation was the first wave which the north received from the south. Both France and Ireland bear distinct traces of an Iberian infusion, but the history

of these earlier invasions is veiled in the night of ages, or, at most, exists simply in the faint echo of tradition.

The speciality of Roman conquest westward is the enduring character of its effects. Over her Asian and African provinces the scimitar of the Moslem has brought desolation and ruin ; the armies of the Faithful, like the breath of the Simoon, leaving only death in their course. Now the western mission of Rome was primarily to the Celt. She compelled him to accept the (moral) baptism of her civilisation, prior to his receiving, in common with herself, the ethnic and material baptism of the Teuton. Political, that is imperial, Rome only knew the latter as her enemy, and finally as her conqueror. It remained for spiritual Rome to make him her convert and her subject, and she could only accomplish this as he made his military pilgrimage to the holy city. The true pupil of the Roman, in the political and municipal, the social and religious sense of the term, was the Celt ; thus, we have some reason to believe, both morally and geographically, by training and position, his heir and successor.

But what was the condition of this pre-eminently nervous and sensitive man of the north-west, when he emerges into light on the page of history ? And we reply, that of ethnic collapse, of racial exhaustion, doubtless after the evocative excitement of a previous era of civilisation. His war chariots, on the one hand, and his Druidical faith, on the other, determine pretty accurately the phase of civilisation, whereof his prehistoric culture was a part. We find it in ancient Egypt, and India, and Persia, and at the siege of Troy. Whether he should be regarded as the master or the pupil, the originator or recipient of this culture may still be an open question, but that he partook of it there can be no doubt. Of course, with this we dismiss "the painted savage" theory to the limbo of all the pedantic vanities, as utterly unworthy either of serious consideration or reply. Chariots and corn fields, and these were retained even to the time of Caesar, imply agriculture and the mechanical arts of civilised life. They cannot exist alone. They have their necessary accompaniments. They are the harmonious parts of a social state that we may deem barbarous, but which Rhameses would have esteemed civilised. So Druidism was obviously a branch of that primæval theosophy, whereof the Brahmins of India, the Magi of Babylon, and the priests of Egypt were the sacred conservators and expositors. That it was traditional and oral in the manner of its tuition bears witness to its antiquity rather than its imperfection. It obviously belonged to what is sometimes called the monumental as contradistinguished from the literate era of civilisation. This, the *bookish* scholars of the eighteenth century, of course, despised, but we who know how long Sanscrit learning

was thus preserved, can scarcely join in their superficial contempt for the unwritten.

Whether the Celt was the originator or the recipient of primeval culture is part of that larger question, the priority of Europe or of Asia in the march of civilisation. Now, for the free and effective discussion of this debateable point neither the theological nor the scholarly world is yet prepared. Divines, of course, hold fast by Ararat and the Orient! while scholars have still but a very inadequate idea of the importance of archæological and anthropological facts in an inquiry so far transcending the limits of written history. But anthropologists should not be so limited. We know that where written records fail monuments often serve us; while profounder yet than these are the indications of character attaching to the races that erected them. Now it is admitted that written records fail us as to the earlier history of the Celts. The utmost that we can gather from history is that they were once the predominant people of Western Europe. What then do we learn from their monuments? Simply, that for the most part they antedate the age of hewn stone, like the earliest Cyclopean remains of Greece and Italy, of which they may have been the precursors, but could not have been the copies. The monoliths, circles, and cromlechs of Gaul and Britain were obviously erected independently of architectural tuition from more advanced nations. They are in the strictest sense of the term primitive, the result either of priority or isolation. Now with this let us combine the important ethnic fact that the Celts are the most sensitive and refined of all the nervous races endowed, indeed, with sensibilities, to which Greek and Roman, Persian and Assyrian were alike strangers, and which are only now in these later ages finding a voice in literature, to which they are obviously in the process of adding a chapter previously unwritten, the voice of the soul. What then are the historic probabilities, as to this ancient race and this remote past, which are thus dawning upon us? Why that civilisation originated on the true Celtic area in the north-west of Europe, whence it swept over Italy and Greece, emerging into its Cyclopean phase during the process, and so reaching Asia, carried the victorious Aryans through Northern Persia into India. It need scarcely be said that this is exactly the reverse of that movement which constitutes the great feature of history proper, namely, the counter-movement of empire from the south-east to the north-west, now in the process of culmination on the primal seat and amidst the primordial race of civilisation.

Now of all this we, of course, have no hint from the imperial penman. It was, indeed, no business of his in a life of Julius Cesar to go down to such depths, or stir up such vexed questions. His hero

had simply to carry into effect the racial movement of the Italic portion of the classic race in their aggressive action on the effete Celts, the exact counterpart of the corresponding though previous movement of the Greeks eastward. The two constituting in their totality the political result of classic culmination, whereof we have the moral bequests in Christianity and the Faith of Islam.

What then is the place of classic civilisation in human affairs? What is its true position in mundane history? What is its ethnic value? What is its significance contemplated from the anthropological standpoint? These, it must be confessed, are rather searching queries, more easily put than answered. It was not a part of the primal or south-eastern movement, that eventuated, as already observed, in Cyclopean civilisation. But it was a very important part of the return wave to the north-west. It was pre-eminently the Mediterranean, as its successor on the Celtic area will obviously be the Atlantic or oceanic phase of empire and civilisation, with a larger area and a grander destiny. Through Greece it received influences from the east; through Rome it transmitted them to the west. Classic civilisation was, however, essentially an Aryan product, as that of Phœnicia and Carthage was Semitic. The true imperial era of the latter terminated with the fall of Babylon, Carthage being but a prolonged and dying echo, without any of the true elements of a new life, the *lower* empire of the Semites, as the Byzantine was of the classic peoples. Hence the ultimate triumph of Rome was certain as the result of an ethnic law, she being the existing representative of Aryan power, then and still in the ascendant. This interaction of the Aryan and Semitic races, which reappeared at the Crusades, constitutes a most momentous chapter in the history of man; and, doubtless, has prospective as well as retrospective bearings.

The speciality of the classic man was his predominant intellectuality. In this he was an apt representative of the European as contradistinguished from the Asiatic type of humanity. Under Greek and Roman institutions, the citizen, for the first time in history, emerged into individuality and liberty. The Semitic monarchies of Egypt and Assyria were simply oriental despotisms of the primeval and theocratic order, that regarded the people as blind instruments, the passive subject-matter of their sacerdotal and political rulers. While the eastern Aryans of India and Persia, though exhibiting many features characteristic of the intellectual family of mankind, were nevertheless so far affected by their geographical environment as Asiatics, that their liberty never advanced from the sphere of speculation to that of action. They might be philosophers, but they were never citizens—except of “the republic of letters!” In a certain sense, then, it may be

said that the classic man affords us the first historic manifestation of the Aryan in a position of imperial supremacy. In him intellect for the first time emerged into formal power as the ruling influence of the world. But this is only saying that he was the first European on the page of history, the precursor and preparer of modern civilisation.

Neither the Greek nor the Roman alone suffices for a complete ideal of the classic man. The former was not adequately gubernatorial, nor the latter sufficiently intellectual for the efficient discharge of their combined mission. The Hellenes could never have built up an enduring empire, and centralised the resources of ancient civilisation for five centuries; while the Latins were equally incapable of originating those unequalled models of literary and artistic excellence which the Greeks have bequeathed to an admiring posterity. Yet the latter were undoubtedly the more classic of the two. But their very speciality in literature, art, and philosophy disqualified them for the ruder but sterner task of government. For this, as already observed, the Roman was fitted by some process of racial amalgamation which had given him strength at the expense of refinement, and provided him with vigour while depriving him of taste.

And now then, for it is time that we should conclude this lengthened paper, though we have by no means exhausted the subject, what are the qualifications and what the legitimate expectancies of the Celt, in reference to the next great manifestation of imperial supremacy? And this involves the equally important query, what is to be the essential character of impending empire? In the first place, speaking racially, it will be an Aryan power, and so, among other things, decidedly an empire of intellect. From geographical position on the Atlantic seaboard, it must be largely, if not predominantly, maritime and oceanic, which, in the present age, implies a truly mundane area, more especially in the sphere of commerce and colonisation. It will probably be bipolar like the classic, France taking the part of Greece and Britain that of Rome, the Gauls being more purely Celtic, and so superior in taste and refinement, while the Britons, by their heavier Teutonic baptism, are like the Latins, more qualified for permanently sustaining the weight and responsibility of empire.

In a sense, then, it may be said that Celtic will be the epicycle and complement of classic supremacy. In it the great north-western movement of civilisation will culminate at its geographical terminus, on the high ethnic area of Western Europe. In a profounder and larger sense than that of Rome, it must prove the summation of the past. It will be the fire-baptism of a world whose hierarchies, monarchies and aristocracies, creeds, codes, and philosophies will be simply as fuel to the flame. At what stage of development, then, it may be asked, has

this great epicycle now arrived? And we answer, that of incipient transference from Greece to Rome, from Gaul to Britain. This needs some explanation.

The shadow of empire has hovered over France for a thousand years. Charle-magne, Louis le Grand, and Napoleon I, were its political exponents; while for the last two centuries the leadership of France in manners and fashion has been undisputed. Its language is the medium of diplomacy, and at one time almost promised to become that of literature and science. But there is a geographical boundary to Gallic power. It is European not mundane. It is courtly, social and political. It is an empire of influence and example rather than of policy and arms, of fashion rather than of art. It is not colonial, and in the higher and grander sense of the term, it is not strictly imperial. France can conquer, but she cannot retain her conquests. She has swept over Italy from the Alps to the Tiber, and even to Calabria, but she has never held it in her iron grasp with the tenacity of Austria.

But it is otherwise with Britain. Slow, yet sure, in her ascent to power, which rests not on the brilliant talents but the solid endowments of her people, she largely resembles Rome in the manner of her rise and in the character of her institutions. She has never attempted to subdue the world under one Alexander or one Napoleon. Her empire, while partly the result of conquest, is also very largely the effect of colonial extension, and under either aspect is rather a steadily accumulating heirloom from the ages than the bequest of one splendid and irresistible conqueror. The diffusion of her language, unlike that of France, is not a fashion but a necessity, the necessity of commerce and colonisation. It is already the native tongue of eighty millions of the most civilised peoples in the world, who by universal acknowledgment, march in the vanguard of political liberty and industrial activity, and who apparently only wait for the full advent of a spiritual era to assert a similar supremacy in literature and art. Their numerical increase is, at the very least, one million annually, and the fact that they possess not only the prairies of America but also the plains of Australia and Southern Africa, affords ample assurance that for this increase there will be "ample room and verge enough" for centuries to come. Their prospective destiny is the most splendid that has ever yet dawned on the sons of men, nothing less indeed than the religious, political, social, commercial, and intellectual leadership of the world during the impending age of imperial power in North-western Europe. The geographical centre of this truly mundane empire will, we hold, never permanently leave the old world, whose geographical extent and numerical force will combine to retain it on

the hither side of the Atlantic. Contemplated thus in the light of its ulterior destiny as the Rome of the future, the Babylon of the west, the stupendous growth of modern London can be readily understood. It is gradually preparing to become the capital of Christendom, the metropolis of civilisation.

But without dwelling on the specialities of Britain as contradistinguished from those of France, we may say that this Celtic area, as the primal seat and western terminus of mundane culture, cannot fail to present some peculiar characteristics, more especially at the period of its emergence into political and intellectual supremacy. As the primal seat and, in a sense, the source of civilisation, its people are most probably endowed with a richer vein of inventive and creative power than the population of any other ethnic area. In connection with this branch of the inquiry let us remember that, quite independently of their past history and racial characteristics, we have reason to believe, even from their geographical position alone, that the Celts occupy the highest ethnic area in the world.

But in strict accordance with that harmony which is found to pervade every other department of nature, the characteristics and the history of the Celts agree with their geographical position, and all combine to point them out as the most nervous and refined, the most sensitive and receptive, yet at the same time as the most active and energetic, the bravest and the most enterprising of the children of men. Such a people, so endowed and so placed, emerging into their inevitable and predestined supremacy, after the subsidence and rest, the ethnic baptism and reinvigoration of not only their historic but their prehistoric past, cannot fail to assume a power and exercise an influence altogether unexampled in the annals of the race, and such as in quality and degree can never again be attained till, in the grand revolution of the horologe of destiny, their epicycle shall commence, and in the far future of yet unborn millenniums they shall be once more called to the legitimate exercise of their sublime prerogative as the religious, political, and intellectual rulers of mankind, at the greatest and grandest crisis that human affairs can ever know, that is at the summation of their historic past and the birth of their yet unrevealed future.

Throughout these remarks we have been so occupied with "the Roman and the Celt" in the abstract, that we have failed to make any attempt at delineating the illustrious man, to a narrative and laudation of whose career the labours of the imperial author are more especially devoted. This omission was, however, intentional. As a biography, the work is not yet sufficiently advanced for such a purpose. We must wait for its conclusion. Then, with the final statement of fact

and rendering of opinion fully before us, we may, perhaps, enter into an ethnic portraiture of the character and capabilities of the great Roman patrician, on whom devolved the stupendous task of converting the most powerful republic into the mightiest empire upon record—a revolution whose advent, however, did not depend on any individual, or the fortune of any battle, such a result being about that time due on the mundane horologe of destiny.

THE PLURALITY OF RACES, AND THE DISTINCTIVE CHARACTER OF THE ADAMITE SPECIES.

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THE object aimed at in the following essay, is simply to inquire how far, and to what extent, the authority of the Bible and of early history confirms or contradicts the supposition that a plurality of races was originally created, or that all mankind were descended from a single pair. After a fair and dispassionate survey of the whole matter, I shall endeavour to draw such conclusions from the entire facts as the case may appear to warrant.

It seems to me extremely desirable, as far as we can, to reconcile the apparently conflicting claims of Scripture and of science; indeed, these differences, if closely examined, will be frequently found, like those among logicians and politicians, to be more apparent than real, more in terms than in things themselves. Although even here I would not for a moment consent to sacrifice truth to secure peace, yet, in this case, I am convinced that the best way to arrive at truth is to banish passion and prejudice, and to discuss the matter in a judicial and philosophical spirit, consistent with the dignity of the subject to be debated. A course very opposite to this, is that which is ordinarily pursued whenever grave and important topics of this class are brought forward; and the prevailing opinion appears to be, that the greater the heat and fury which can be excited, the more surely will truth at last be elicited.

On the directly theological part of the question, I desire to touch as lightly and as briefly as the case will admit of. I may state, however, on the outset, that I am not at all prepared to dispute the authority or the inspiration of the Bible, or to maintain that it is in

any respect at variance with science. Nor do I deem it in the least degree necessary, for the purpose of maintaining my argument to the full, that I should do so. On the contrary, I contend that Scripture and science are thoroughly consistent with, and that they are the best and surest supporters of each other. And so far from deeming it necessary to attempt to impugn the inspiration of the Bible, I hesitate not to assert my conviction that, if you once deny the authority of particular parts of it, it becomes impossible to determine what portion is inspired, and what is merely human. Each person will, of course, claim the right to settle this point for himself, and will be induced to deny the divinity of all those passages which at all militate against his own particular views, or condemn his peculiar failings and practices. Further than this, I would even assert that, if any of the books of the Old Testament exhibit peculiar traces of inspiration, Genesis in many respects bears very evident tokens of its divine origin. At the same time, it appears very reasonable, and fully consistent with all that we can conjecture (for we can hardly be said to know anything with certainty beyond the records of revelation) concerning the Divine wisdom and goodness, that the Bible may have been dictated throughout by Divine authority so far as regards its object in teaching men their duty, but without at all being intended to carry the same authority as an instructor on matters of science or of history. Nevertheless, as observed by Lord Bacon on several important points, the teaching of the Bible with regard to philosophical topics, has proved to be not only quite sound, but far in advance of modern discoveries.

It is, moreover, surely quite possible and rational to believe entirely and implicitly in the inspiration and truth of the Bible, and of every part of it, while at the same time you do not acquiesce with the same implicitness in the interpretation that has been put upon particular passages. As regards matters not directly theological, even the teachings of the church may be fairly questioned here, and that by the most orthodox churchmen; inasmuch as the church, like the Bible, does not set up for a teacher on matters of science or history, but only seeks to guide its members aright as regards their religious duties: indeed, the interpretation put by the authority of the church upon the meaning of the Bible in relation to profane topics, cannot be considered to amount to anything more than the individual opinions of the writers on these points, who, had they lived in our day, and been acquainted with the discoveries of science known to us, would no doubt have greatly modified their sentiments upon many matters. It has, therefore, always appeared to me to be highly undesirable to contend, as some very well intentioned, though not very discreet persons take every opportunity

of doing, that Scripture and science are on many occasions directly antagonistic, merely because they appear in some slight degree to differ, but which seeming contrariety is often caused, not by the actual opposition of scripture to modern discovery, but by the mode in which we have been accustomed to interpret scripture in regard to this subject.

The principle adopted in the following essay with regard to the proper construction of scripture, will moreover do much to disarm the authority of those who contend that, from the direct contradiction which modern science gives to many of the statements contained in the Bible, especially in the Book of Genesis, it is impossible that the sacred volume can be throughout inspired.

One very remarkable instance of this sort occurs with respect to the opinion as to the plurality of races in the human species, entertained by scientific inquirers at the present day. The conclusion at which many eminent physiologists have arrived, is that the whole race of mankind could not possibly have sprung from a single pair. But here they are referred to the scripture narrative, which, they are told, asserts positively that Adam and Eve were the parents of the whole human race. This, however, is exactly one of those cases where the Bible has not been allowed to speak for itself, but its meaning has been explained through the forced and unwarranted interpretations that have been put upon it by writers in ages gone by. Thus, the first chapter of Genesis contains a simple and plain account of the creation of different races of mankind all at once, both male and female. A command was, moreover, then given to man "to be fruitful, multiply, and replenish the earth;"* but which would surely not have been given to Adam alone, when he had no means whatever, Eve not being then created, of fulfilling the command. Nor would Adam while in Paradise, even after Eve became his wife, be told to replenish the earth, to which as yet, beyond the boundaries of Paradise, he had no access. The second chapter (except by the interpreters alluded to) was never intended to contradict or nullify the first, but was only added to give an account of the creation of a particular pair of human beings who were to be the parents of a particular race of people. The Bible, indeed, so far from teaching us that Adam and Eve were the progenitors of the entire race of mankind, on many occasions and in various ways directly and distinctly negatives any such supposition. Thus we are told by the Bible, that after Cain had slain Abel, and the Almighty had set a mark upon him, the murderer exclaimed that every one who sees him will slay him. But how

* Genesis i, 28.

could this be unless the earth had been already peopled, which could not possibly have been the case if all mankind had sprung from Adam and Eve?

The very circumstance of Adam calling his wife Eve, in token that through her as a mother the promised Redeemer should be born, also necessarily implies that there were other women besides Eve then living upon the earth, and who were not descended from Eve, through whom this promise might be accomplished. It has also been remarked by a learned writer, who is, however, opposed to the theory which I am maintaining, that Eve upon the birth of Cain her first-born, exclaimed, "I have gotten man, the very Jehovah; *i. e.*, I have brought forth the man who is Jehovah himself, the person who, according to the promise, is to come and redeem and restore me, my husband and our children, to the favour and acceptance of our Creator,* and who was to be the promised Messiah and Saviour of the world." But could Eve have supposed that the Redeemer would be born at a time when the earth was not peopled with men to be redeemed, with the exception of herself and Adam, and their children? On the contrary, this supposition of Eve's necessarily implies that the earth was at this time filled with inhabitants.

The Scripture shortly afterwards informs us that Cain became the builder of a city.† But does not this fact also imply that there were at least several other persons on the earth at that time besides his own family? Again, as regards the wife of Cain, a question may be raised as to who she was, if there were no other people on the earth except Adam and Eve and their family. Besides which, although every particularity respecting the successive birth of sons to Adam and Eve is recorded, there is no mention of their having a daughter until after the birth of Seth; yet, when any of Adam's children had daughters, this is always stated. The natural, and indeed the only direct inference to be drawn from the sacred narrative itself is, that there were other races upon the earth, and that Cain's wife, as also Lamech's, were taken from them.

From what the history of civilisation teaches us, we cannot suppose that efforts would have been made to cultivate the ground, or to tend flocks and herds, when only one family on the earth had to be maintained; nor would the members of this family have been likely to resort to this practice unless they had learnt it from others whose necessities had induced them to undertake it.

Each of the facts which I have mentioned, and which are taken from the Scripture narrative, go strongly to prove that there were

* *Mosaic Account of the Creation.* By Philo. 1819.

† Genesis iv, 17.

other races upon the face of the earth besides Adam and Eve. If we read the narrative literally we can arrive at no other conclusion ; and this view of the Scriptural account is much strengthened and confirmed by the circumstances which I have recently stated. The argument of the plurality of races may therefore rest on the Bible alone. Those who oppose this opinion, not its supporters, are compelled to resort to extraneous matter to uphold their views.

In addition to this it may be remarked, that it appears much more probable, and more consistent with what we have experienced of the general dealings of the Almighty in regard to the world, that He should have intended only that Adam and Eve and their descendants, being limited to a particular race, should inherit Paradise instead of the whole world residing there, and not entering upon the other parts of the earth, which would consequently, had it not been for the fall, have been left totally uninhabited by the very persons whom it was created to contain. According, however, to the literal meaning and reasonable interpretation of Genesis, Adam and Eve found the earth so peopled when they were turned out of Paradise, not of course by their own descendants who were as yet unborn, but by the "males and females" and their descendants, whose creation is recorded in the first chapter of the sacred volume.

In the fifth chapter of Genesis, v. 2, it is stated that the race of mankind, not one man alone, is called Adam. In the sixth chapter, v. 2, the descendants of Adam are spoken of as "the sons of God," a race distinct from the rest of the world, but with whom they intermarried. By "men" in general, who are mentioned in the first verse, it may be inferred are meant those of the original and ordinary creation, described in the first chapter.*

That there was a distinct creation in the case of Adam and Eve cannot be questioned. Their descendants, however, appear to have formed a separate race of themselves from the rest of the world, from which that of the Hebrews shortly afterwards sprang, and which is very early mentioned in Scripture as a distinct people. Moreover, the object of the Bible as regards the historical portion of it was obviously not to give an account of mankind in general, but only the Hebrew race, and which course was pursued throughout the Old Testament. Very soon

* It was stated by the Rev. Dunbar Heath, whose classical acquirements and extensive Biblical researches are well known, in his address at the inaugural meeting of the Manchester Anthropological Society, that, in his opinion, the Old Testament clearly recognised a plurality of races, and he adduced not only the fact of Cain's banishment into a land of cities, but the mistranslated phrase "high and low, rich and poor", in several parts of Scripture, the real rendering of which should be "the race of Adam and the rest of mankind." The words in the original are simply "Adam and Ish."

after the time of Abraham, the Hebrews were recognised as a distinct and separate race of themselves, which they surely would not have been merely because they belonged to his family. Thus, Joseph, when brought into Egypt, was spoken of as "an' Hebrew;"* and, in the very interesting representation discovered among the Egyptian remains descriptive of the history of Joseph and his brethren, they have each that strong peculiarity of feature even now characteristic of the Hebrew race. To Abraham was first revealed the design of God with regard to this people; but this does not necessitate its not having been formed long before. Not improbably there were others of the Hebrew race besides Joseph and his brethren, who united with them while they were in Egypt, and thus swelled their numbers beyond what in the ordinary course of propagation they could have reached. The promise to Abraham, indeed, related mainly to the Messiah being descended from him. His being the father of a nation did not preclude others of the same blood becoming members of that race. These appear to have been denominated Hebrews as well as his direct descendants; nor could they, as has been asserted by some, be confined to those who were descended from Ebur. The most probable supposition appears, therefore, to be that, although the children of Israel are the descendants of Abraham only, the Hebrew race included that distinct tribe of people who were descended from Adam, and who retain that peculiarity of feature, and other marked characteristics which have ever served to keep them separate from the other races of the earth. By being the father of a nation, does not necessarily or exclusively signify being its progenitor, but only its founder or deliverer, as many a monarch has been styled the father of his people. Abraham himself is indeed spoken of as the Hebrew,†, as though the race to which he belonged, which could only have been the Adamite descendants, had been thus early distinguished and recognised.

But it may be said that if there were other races of mankind besides that of Adam, they were all destroyed at the deluge, when Noah and his family were preserved in the ark. Noah himself, it is to be observed, is spoken of as "perfect in his generations,"‡ which may be implied to mean that he belonged to the Adamite race, with very little intermixture of the blood of the ordinary race of mankind. The Bible, as it has been ordinarily interpreted, has led to the supposition that the whole earth was overwhelmed by the catastrophe in question. Here, however, we are told, that the Bible and modern science come into direct conflict. The question, therefore, must again be

* Genesis xxxix, 14.

† Genesis xiv, 13.

‡ Genesis vi, 9.

raised, is it the Bible that asserts directly and unequivocally that the deluge was universal? or is it merely the arbitrary and unwarranted interpretation that has been put upon the words of the Bible which has led to this opinion? If the Bible be allowed to be its own interpreter, according to the ordinary and fair rules for interpretation, it will at once be obvious that it contains nothing to warrant the belief that the whole world was at once laid under water and destroyed. Both by sacred and profane historians, the term "whole world" is frequently meant to signify only the entire extent of the territory referred to. In the account of the temptation in the wilderness, the devil is described as exhibiting to our Lord all the kingdoms of the world at once, in one moment, and from the same point of view,* by which of course could only be really meant those cities and kingdoms lying around Jerusalem. St. Luke tells us† that a decree went out from Caesar Augustus that "all the world should be taxed." Here again is clearly meant not the entire globe, but only such part of it as was comprised in the Roman Empire. So when it is said in St. John,‡ that "the world is gone after him," it was not really meant that every person in the world had become a follower of our Lord, but that a very great number in a certain district had done so.

After the destruction of Sodom and Gomorrah, Lot's daughters either imagined that the whole human race was destroyed,§ or confined the term to the descendants of Adam or the Hebrew race. Whichever way it is taken, whether symbolically or as confined to one race only, the description of the universality of the Deluge must be considered to comprehend merely the district inhabited by the race to which Noah belonged. In many parts of Scripture, both in the Old and the New Testament, the term "whole world" is evidently intended to signify not the entire human race, but either a very great number of men, or a large proportion out of the district where the event happened.|| Cicero and other ancient writers also frequently speak thus metaphorically, when they intend to include a great number of people in their description of any event. When we read in the newspapers that upon an occasion of much interest "all London" was assembled at the Mansion House, should we be construing the meaning of the writer fairly if we insist that he intended deliberately to assert that every man, woman and child in this vast metropolis were assembled in one building? And yet in this unreasonable and unfair manner do those critics insist upon interpreting the Bible, and unnaturally distorting its meaning, who contend that the account

* Matt. iv, 8. † Luke ii, 1. ‡ John xii, 19. § Genesis xix, 31.

|| See also Acts xi, 28, xvii, 6, xix, 27, and xxiv, 5; Romans i, 8, x, 18; and several other passages.

there given of the Deluge necessarily and inevitably means that the whole world was swept away by that inundation. When the meaning of any phrase is doubtful, the fair way is to refer to other and context passages in the narrative which may serve to throw light upon the whole. This is the course ordinarily pursued with regard to other writings, and this is the course I propose to adopt in regard to the Sacred volume. Without such a mode of interpretation, its meaning will often appear obscure and contrary to science and to experience. Interpreting it in this the only fair and legitimate mode, its meaning will be apparent, and its relations appear at once in harmony with our knowledge of things, and with what philosophy teaches. Thus viewed, Scripture and science will be found not to contradict but to aid one another, and to render each other important service.

That a vast Deluge did take place at the period and in the manner described cannot be doubted, or that the event itself was miraculous. If so, it is of little importance whether the whole or only a part of the earth was covered by it, inasmuch as the miraculousness of the event in no degree depended on the number of human beings who perished in the waters, or on the depth or width of the waters themselves.

In reality, I hold it to be far more heretical, as more directly at variance with the plain statements contained in the Bible, to assert that the earth moves round the sun, instead of the sun moving round the earth, than to maintain either the plurality of the human race, or that the Deluge was not universal. It may be said, indeed, that the Bible does assert, and in direct terms, that the sun moves round the earth, and not the earth round the sun, while it nowhere maintains in terms equally positive either that Adam was the father of the whole human race, or that the Deluge extended over the entire world.

If we examine minutely the description of the Deluge as contained in the Bible, we find that the depth of the flood, being the extent to which the waters prevailed upwards, was only fifteen cubits,* or one-half of the height of the ark, which was thirty cubits.† And yet we are told that the mountains were covered.‡ This assertion alone would lead to the conclusion that merely a certain very limited district, in which were only hills of a very moderate height, could have been overflowed by the waters. After the Deluge had subsided, the earth is spoken of as divided,§ implying that people were found living upon it after the flood. Cities and also kingdoms appear to have been formed soon after Noah left the ark,|| which could not have been done merely by his family. The assertion that by the sons of Noah "was

* Genesis vii, 29. † vi, 15. ‡ vii, 20. § x, 25, 32. || x, 5.

the whole earth overspread,"* may reasonably be interpreted to mean no more than that in every nation would his descendants in process of time be found, a prediction which has been singularly verified by the Hebrew race.

But it has been urged that in the New Testament the opinion that all men were descended from Adam has been confirmed by reference to that event, and by expressing the opinion of the inspired apostles and writers of that portion of the Bible. Were this the case, their authority on matters purely secular or scientific might fairly be questioned, considering that their office was not to teach men philosophy or history, but merely to instruct them in their duty. And if they were ignorant or misinformed respecting the structure and motion of the planets, it is not unreasonable to suppose they might have been left equally in error respecting the other parts of the creation. There is, however, in reality, no assertion throughout the New Testament that Adam was the father of all mankind. The passage which may most reasonably be contended to argue against the plurality of races is the expression of St. Paul, "For as in Adam all die, so in Christ shall all be made alive."† There is, however, no assertion here that all were descended from Adam, but that all died through his transgression; and for this purpose it seems to matter little whether the whole human race was actually descended from him, or whether he was to be regarded as the representative of that race, and through his misconduct they were to suffer.

The scheme, if it may be so termed without irreverence, developed in Scripture with regard to Adam and the fall, appears to be this. Adam, as the representative of the whole human race, was put to the trial and failed, and upon that was condemned to die, turned out of Paradise, and placed upon the same level with the rest of mankind. But through the descendants of Adam the redeemer was promised, the benefits of whose coming were extended from the posterity of Adam to the whole human race. The errors in the interpretation of the Bible already alluded to, have not arisen from any ambiguity in the Bible itself, but from the strained, unnatural, and unreasonable interpretation that has been put upon it by misguided zealots who take upon themselves to explain its meaning according to their own narrow views, and who are presumptuous enough to imagine that the Divine scheme of redemption would not be consistent and complete without their interference and aid. These people, instead of taking their system of religion from the Bible, first frame a system of their own, and then cut, and pare, and explain away the Bible so as to make

* Genesis ix, 19,

† Corinthians xv, 22.

it accord exactly with that system. It is from pursuing this course that the errors to which I have adverted in regard to the origin of mankind have arisen.

The following observations with regard to death having been brought into the world and inflicted upon mankind at large in consequence of Adam's transgression, are from the pen of an ingenious and learned writer of our own day, who contends that it "was not a threat that *corporeal* death should be inflicted; it signified that breaking the commandment, he who had it given him should lose the high lovely life which is in union with God, sink into irreligiousness, which is infelicity and disquiet. He died to the true life of the spirit the moment that he tasted; but as to his material body, he continued as he was before. Equally unscriptural and groundless is the notion that physical death was even an appendix to the punishment. Adam would have died had he never fallen, and so would all of his posterity, though none, perhaps, would have died of disease."^{*}

In addition to this, I may remark that the sentence upon Adam was not of death generally, but of death upon a particular day. "In the day that thou eatest thereof thou shalt surely die." Now, according to the scriptural narrative, physical death did not take place on that day; and, therefore, we may reasonably infer that not physical death, but death of a spiritual or moral nature was what was intended to be inflicted as a punishment for Adam's transgression.

We come, in the last place, to the consideration of the early historical records of different kinds, containing reference to the creation of man, and we have to enquire how their testimony bears upon the question before us. Evident allusion to Adam and Eve may be found in the remotest traditions; but it is very remarkable that they are there spoken of not as a single pair but as a race. Thus, as Grotius records,[†] "The Egyptians tell us that, at first, *men* led *their* lives in great simplicity, *their* bodies being naked, whence arose the poet's fiction of the golden age, famous among the Indians, as Strabo remarks. Maimonides takes notice that the history of Adam, of Eve, of the tree, and of the serpent was extant amongst the idolatrous Indians in his time." Traditions of this history, he also tells us, are to be found in Peru and the Philippine Islands, and the name of Adam is preserved among the Brachmans.[‡] The most ancient traditions and historians also concur with the Mosaic account as to the extraordinary longevity of the early inhabitants of the earth. The first men are recorded to have found out the fruit of trees; and in the most ancient Greek mysteries they cried out *Eva*, and at the same time shewed a serpent.

^{*} *Life, its Nature, etc.*, by L. H. Grindon, chap. vii, p. 74.

[†] *De Veritate*, lib. i, s. 16.

[‡] *Ibid.*

Diodorus Siculus relates that "the first men," not the first *man* only, "lived very hardy before the conveniences of life were found out, being accustomed to go naked," referring evidently to man in Paradise. And Plato, deriving his account from early tradition, in relation to the primitive inhabitants of the earth, speaks not of one man, but of *men* in the plural, "God their Governor fed *them*, being *their* Keeper ;"* and in another passage he states that "they fed naked and without garments in the open air." The opinion of each of these early writers appears clearly to have been that there was originally a plurality of races. Cicero, in his book on the nature of the Gods, describes the creation of man, but makes no reference to the race being derived from a single pair. In Ovid's *Metamorphoses*, the creation of man, as derived from the ancient traditions, is described, not however as though the race sprung from one pair only.

Reference has already been made to the very remarkable ancient Egyptian representation of Joseph and his brethren in Egypt, in which that peculiarity of countenance characteristic of the Hebrew race is clearly marked out in each of the persons described, and which shows that at that early period that race formed one as distinct from the rest of mankind as it now does. This moreover proves how little mankind change, even in the long course of years ; and it may be remarked that the representations of Negroes and of Egyptians preserved in the Pyramids exhibit precisely the same cast of countenance as is observable among those people at the present day. This, as I have already remarked, is especially the case with regard to the Hebrew race, although inhabiting different parts of the world, and being consequently subject to those various influences by which changes in appearance are supposed to be produced. But if there has been no perceptible change in races since the time when the paintings in the pyramids were made, the change between the time of the Creation and the erection of the pyramids could not have been very essential, nor could the difference apparent in different races of men have been produced by cross-breedings, if, as contended, they were all originally of the same race. As animals were created male and female, several at the same time, but of different races and species, allied to one another as regards their general structure, but widely differing in their peculiar formation ; so is it most reasonable to suppose that the same course would be pursued with regard to man, and that it was so followed on the original creation of the species described in the first chapter of the Book of Genesis, different races and types being at once formed.

The Jews, God's own people, who had the sacred oracles delivered

* *Politics.*

to them direct, differed in opinion as to the question of the plurality of races.* And surely if this liberty was allowed to them, we, at least, ought to have the same freedom. Indeed, St. Augustine was the first among Christians who insisted that all mankind were descended from Adam, and that all Christians were bound to adopt that view as regards the sacred narrative."†

As has been well observed by an eminent physiologist, "the differences of physical organisation and of moral and intellectual qualities which characterise the several races of our species, are analogous in kind and degree to those which distinguish the breeds of the domestic animals, and must, therefore, be accounted for on the same principles. That they were first produced in both instances as native or congenital varieties, and then transmitted to the offspring in hereditary succession."‡ He further remarks that "external or adventitious causes, such as climate, situation, food, way of life, have considerable effect in altering the constitution of men and animals; but that this effect, as well as that of art or accident, is confined to the individual, not being transmitted by generation, and, therefore, not affecting the race."§

The difficulty of supporting the theory of all mankind having descended from a single pair, and of the varieties in their descendants having been caused by circumstances affecting their growth and mode of living, is most forcibly shewn by the shifts and devices resorted to to uphold such a notion. Thus, one writer seriously contends that the peculiar formation of the physiognomy of the New Hollanders, has been caused by their constantly flinching from the numerous gnats by which they are ceaselessly tortured!|| "The custom of carrying children on their back has also been referred to in order to explain the flat nose and swollen lips of the Negro. In the violent motions required in their hard labour, as in beating or pounding millet, the face of the young one is said to be constantly thumping against the back of the mother! This account is seriously quoted by Blumenbach."¶

How much more in accordance with nature, with reason, and with Revelation, is the opinion that when mankind were originally created, several species were formed at once, from whom the different varieties are derived; instead of supposing that one pair only was created, and that all the differences in formation and colour, and in moral and intellectual qualifications, were caused by adventitious circumstances affecting their descendants.

My desire on the present occasion is to reconcile and to render consistent, as far as I can without the slightest compromise or sacrifice of

* *Memoirs of the Anthropological Society*, vol. i, p. 345.

† *Ibid.* 347.

‡ Lawrence's *Lectures on Man*, 1st edit., pp. 375, 376.

§ *Ibid.* p. 376.

|| *Vide Ibid.* p. 265.

¶ *Ibid.* p. 165.

truth, the apparently, but not I believe really, conflicting testimonies of Scripture, of experience, and of science. As Revelation is the voice of God, so reason is the noblest gift of God to man. It is the duty of man to use both aright, and to apply each to the purpose for which it was bestowed. Those two most precious of all treasures, which God has given and intended to be used in conjunction, let not man vainly presume to put asunder, or to apply to oppose or thwart each other. Disunited and counteracting one another, confusion and chaotic disorder are the inevitable result. Reconciled and used aright, and acting in conjunction, the whole system appears at once reduced to order, and the harmony and perfection of the universe are seen to extend to the remotest regions throughout. Over the face of nature the spirit of omniscience is then perceived to rule. Thus, to use reason is but to apply the noblest of the Creator's gifts, and the most exalted of man's endowments to that which is at once its highest and its most legitimate purpose.

THE PEOPLES OF EASTERN ASIA.*

DR. ADOLF BASTIAN is a writer to whom great respect is due from all who are interested in the study of anthropology. His great work, entitled *Man in History* (*Der Mensch in der Geschichte*, Leipzig, 1860), contains a wonderful collection of information as to the psychological side of the science—from the nervous system and the metaphysical theories of ideas to the nature of language, the history of religion in its widest sense, the abnormal phenomena of madness, hysteria, and morbid enthusiasm, and the social development of the various human races. This remarkable work is too large in its extent, and too discursive in its character, to be suitable for translation under the auspices of the Anthropological Society, while so many works better suited for scientific manuals remain scarcely known even by name in England; but it may be safely said that any of the members of that Society whose inclination is towards psychology, and to whom the rather vague and mystical views of metaphysicians seem wanting in solidity, will find the study of Dr. Bastian's *Mensch in der Geschichte* a most profitable undertaking.

After thus relieving his mind of a load of learning, Dr. Bastian started on a journey into the far East. Between 1861 and 1865 he

* *Die Völker des Oestlichen Asien. Studien und Reisen von Dr. Adolf Bastian.* Vols. i and ii. 1866. Leipzig: Wigand. London: Trübner & Co.

travelled, making long stays for the purpose of studying the native languages and literature, in Burmah, Siam, Cambodia, and Cochin China, the Eastern Archipelago, Japan and China; and in 1865 returned from Peking through Mongolia, Siberia, and the Caucasus, and was present at the Birmingham meeting of the British Association. In the second of the two volumes now before us he gives an account of his journey in Burmah, and other volumes are to follow with details of the remainder of his vast journey, which was made as a private enterprise in the cause of oriental learning. His desire to be burdensome to no one is curiously illustrated by his scruples in receiving an allowance from the King of Burmah, according to the custom of the country with distinguished visitors. He did not want the money, but it would have been flying in the face of majesty to refuse the monthly bag of silver, and so he had to settle it by acquiescing in its disappearing somehow between the royal treasury and his own cash-box, an arrangement which probably suited all parties.

In his first volume Dr. Bastian compiles the result of his study of the native history of the Indo-Chinese nations. It must have cost him a stupendous amount of labour, but unluckily its contents are seldom of much interest to Europeans, of whom the number is small who take an interest in the dynastic legends of countries whose history is very dull or prolix, and whose mythology is for the most part duller or more prolix still. A native Indo-Chinese history, if we take the best points of it, appears to consist of the following elements:—First, an account of the creation of mankind, or their descent from trees, apes, or demons; next, the low alluvial lands will have the stories of the first settlement of colonists, and as the land is often of recent growth the legends of its colonisation may sometimes contain history mixed with more or less of myth. The following is such a story from Pegu:—

“Long ago, when what is now the great delta of the Irawaddy was an open bay, the king of Kala-gyee sailed across the sea, and saw a wild duck sitting on her nest, whereon he remarked to his followers that the water was sinking, and accordingly they found, as the bird flew off, that there was in fact a morsel of mud visible just large enough for her nest. The king had a stone pillar set up to claim the land, and returning home had the event chronicled in the royal archives. Long afterwards another king of Kala-gyee sailed to the same place and found not only that the land was dry, but that the Taliyins had settled on it. He said to them, ‘You have no right here, this is my land; did not my ancestor set up his boundary-stone here?’ The Taliyins answered, ‘The land is ours; where is your boundary-stone? we know nothing of it.’ The stone was duly found, and the Taliyins were much embarrassed what to do, but the prince of the Nats (demons or gods) appeared in a dream to the king of the

Taliyns and told him to acknowledge to the king of Kala-gyee that the stone was really his, but that the Taliyns had been there long before and left their memorial, as he would find by digging underneath the stone. Underneath the stone accordingly were found the tokens of the Taliyns, and so, the story simply concludes, the Taliyns kept the kingdom, and therefore it was called Pae-suh, or 'the stolen land,' for the Taliyns had never really put their tokens where they were found, but the thing came to pass through the power of the prince of the Nats." (P. 225.)

Between the early period and modern times come accounts of kings and political events largely mixed with fable. Monstrous dragons appear and are slain by heroes; when water is wanted a king strikes the ground with his staff, and a spring gushes forth; and the princes and princesses who figure in the story have, as a rule, in Buddhist countries, a predilection for coming into the world in ways not recognised by modern European physiology. The prettiest story in the book is, perhaps, that of the princess Thatungdau, whom king Noatasa gave in charge to his four knights to be carried safe to Pagan, where she was to be married:—

"She was so slight and tender that they put her in a needle-case that the rough hands of the men-at-arms might not hurt her. They weighed the needle-case (it just went against one flower of jessamine), and each of the knights was to take charge of it for a day. Yansitta was the first in charge, but by evening his curiosity was too much for him, and he opened the cover a little way and peeped in, but the evening breeze blew in and puffed up the little lady, so that she began to swell out over the top of the case, and he had quite a difficulty in poking her in again, and getting the cover on, and then he handed the case over to the next man. But he had not reckoned on the precautions taken; when the needle-case was weighed before being passed to the next guardian it was found to be a whole petal of a jessamine-flower too heavy, and the inquisitive hero was condemned to die. He proved too much for them, however, and went off with the princess, needle-case and all." (P. 45.)

As the native Indo-Chinese histories approach modern times, though their character otherwise changes little, they acquire an interest to us by the appearance from time to time of well-known European names. The native history of Ava, coming into the seventeenth century, describes the reign of Ngadabdayaka, and the flight of Younhli in 1658, under pressure from the Manchus, over the Burmese frontier to Ava, when his forces attacked the capital, but the city resisted the first attack under the leadership of Mithari Katou, who appears to have been an Englishman, Mr. Cotton; and about the same time Siamese history mentions an expedition under the celebrated European, Phaulcon (p. 61-2). In later times the Burmese court annals give the following account of the war with the English:—

"The Kulapyu, or white strangers of the west, fastened a quarrel upon the lord of the Golden Palace. They landed at Rangoon, took that place and Prome, and were permitted to advance as far as Yandaboo, for the king, from motives of piety and regard to life, made no effort whatever to oppose them. The strangers had spent vast sums of money in their enterprise, and by the time they reached Yandaboo their resources were exhausted, and they were in great distress. They petitioned the king, who, in his clemency and generosity, sent them large sums of money to pay expenses, and ordered them out of the country." (Vol. i, p. 68.)

Special students of Indo-Chinese subjects will find abundant details in this volume. For anthropological purposes the accounts of the more civilised Burmese nations, and also of the wilder Karens, Ahom, Singpho, etc., are of interest, though anatomical details are unfortunately very scanty.

In the second volume Dr. Bastian begins with the account of his journey at Rangoon, where he notices the practice of building houses on piles as simply made necessary by the muddy morass on which they stand. Dwellings of the nature of Swiss lake habitations are, in fact, here, as in several other places in Asia, so adapted to the circumstances of the country, that their appearance can excite no surprise. On the other hand, the curious point about the Swiss lake-dwellings is, the fact of their existing in places where it is hard to see why the dry land might not have done as well, or better. On his journey towards Prome, up the Irawaddy, he noticed the road-side shelters set up by the pious Buddhists for the refreshment of travellers, and the offerings of food left by the wayside for the demons or Nats, who seem quite to fill a large enough place in the Burman mind to justify the detailed accounts of them which are given in many places. Another topic of continual interest to the traveller in Buddhist Asia is the question of meat or no meat. As we all know, Buddhism forbids the taking of life, and our traveller, finding fowls and eggs at least absolutely necessary to keep up his strength in an unhealthy and debilitating climate, had a continual difficulty in getting outcasts or foreigners to kill the fowls and break the eggs, which it was hard even to buy. If the Burmese and their neighbours really abstained from the flesh of animals and the contents of eggs, there would have been more satisfaction in complying with this inconvenient ordinance, but this is by no means the case. As the king of Burmah, a thorough-paced theologian, carefully explained to Dr. Bastian, it is very wrong indeed to kill animals for food, and therefore you must get some one else to do it for you—what becomes of the misdoer is of course of no consequence to you. In the Siamese temples the torments with which fishermen will expiate their wicked-

ness in hell are depicted on the walls in awful colours. The wretched sinner hangs by the tongue to a fishhook, and mocking demons fish him up out of a lake of pitch and drop him in again. But, nevertheless, the whole population of Burmah delights in a horrible preparation called *ngapie*, which is made by burying fish till it is putrid, and mixing the result with rancid butter. The *ngapie* is so largely consumed that the whole atmosphere of the country, says Dr. Bastian, is pestiferous with it, and the fishermen have to live principally by providing it. The little difficulty as to conscience is therefore ingeniously removed by the fisherman never killing the fish he catches—he merely leaves them out on the bank, and then if they die it is their affair, not his. As in other countries, extreme ceremonial laws lead to evasions which make them practically less troublesome. A *pungyi*, or, as we call him, a *bonze*, must not eat after noon; therefore he sits with his back to the sun, and, being hungry at two or three o'clock, inquires of his scholar whether it is noon yet, to which the boy is trained to answer that it is not, and, on the strength of the pupil's assertion, the master eats another meal. The effect of practices of these kinds on the moral sense of the people is of course disastrous.

The king of Burmah now lives at Mandalay, being, it is said, disgusted with Amarapura by the English embassy presuming to come with their steamboats actually up to his palace. Dr. Bastian had hoped to remain an unnoticed stranger in the city, and thence, in good time, to travel where he would, studying the country at his leisure. It lay, however, quite outside his calculations that the king should know anything about English newspapers, but he had been mentioned in one, and found accordingly that his movements were watched and strictly limited. On presenting himself at court, nevertheless, he was well received, and the object of his journey—the more complete study of Buddhism—appeared to the king a highly reasonable and proper one. Accordingly he took up his abode in the palace, and made a considerable stay there—very successful in his investigations into literature and manners in spite of inconvenient accidents, such as that of profaning the royal abode by carrying in his umbrella, a thing only permitted to royalty, and accidentally having his bed placed so that his feet were turned towards the king, which is a high crime and misdemeanour. Resuming his journey, Dr. Bastian proceeded downwards into Pegu on the Siamese frontier, where his present volume leaves him.

Among the anthropological and ethnographical matters touched upon, the following are some of the most worthy of notice. Phases of mixed Brahminism and Buddhism are always interesting, as show-

ing the course of the two great waves of religious conversion in Eastern Asia. Such things as Brahmanic idols officiating as attendant gods to the great Buddha, and Brahmanic images adorned with Buddhist symbols, are noticed by Dr. Bastian (p. 73). The accounts of tattooing are curious; it appears to be done for magical purposes in Burmah, certain figures having a virtue of protecting the body, and especially hard substances as gold and silver being introduced under the skin to make the patient invulnerable (pp. 35, 144, 160). Eclipses, as elsewhere, are caused by the great dragon, and the calculation of them by the French astronomers did not appear extraordinary to the priests; the foreigners know a great deal about the dragon and can tell when he is likely to be hungry (p. 109). The accounts of Buddhist doctrines and ceremonies correspond in great measure with those given by Mr. Hardy in his description of Singhalese Buddhism. The following remarks on the complexion of the Burmese are interesting.

"At the bathing-place I had a good opportunity of observing the shades of complexion, which run very much into each other. A traveller who, having only known the Burmans of Rangoon, should see others from Ava, would doubtless pronounce those from the northern provinces to be darker, forgetting that the Burmans resident in Rangoon, who besides have all immigrated on account of their commercial affairs, expose themselves little to the sun. If he went into the settlements of the true natives of Rangoon, the fishing villages of Talein, he would find their inhabitants approaching yet more to the dark brown colour. The Karens, especially the Tzan, are generally lighter, as being in thick woods they are seldom exposed to the sun, but the Bghais again are very dark, although they come not only from the north but from high, although treeless mountains. The effect of external influences is shown more clearly in the Burman women. . . . When they are bathing it is easy to see, as if marked by a line, how far their usual clothing extends, for, contrasting with the dark tint of the upper part of their bodies and their arms, the rest of the body might be that of an inhabitant of Southern Europe. This is common in India. The Chinese ambassador remarked it among the Cambodians, whom he calls deep black, '*mais pour les dames du palais et même parmi les femmes de Nan-plung il y en a qui ont le teint d'un blanc éclatant comme du jaspé, et cela vient de ce qu'elles ne voient, ni le ciel, ni la lumière du soleil.*'" (p. 23).

A fair complexion seems considered beautiful (p. 161). As a medical man Dr. Bastian will probably be able to give other valuable anthropological descriptions of the races he met with in the East. As for the Burmese, at least, their interest in anatomical studies is considerable, but they look at dead bodies as merely suggestive of the miseries and horrors of existence; a courtier who had to visit Dr. Bastian used to get out one of his anatomical books, and groan moral reflexions over it. We Europeans, "black barbarians" as they con-

sider us, may retaliate this treatment on the history-books which it was Dr. Bastian's severe fate to wade through; they fill us with a sense of the extremest weariness of the habits of East Asiatic life, and the events of East Asiatic history.

One more matter is mentioned by Dr. Bastian which should always be spoken of when an opportunity occurs. The native governments of South-Eastern Asia find their peoples well stocked with good thriving native vices, which are quite as much as they can conveniently deal with. Under these circumstances they object somewhat to the importation of new ones from abroad, and have therefore endeavoured by law to keep opium-smoking out of the country; but now that we are established in the district of course the opium-houses flourish, and Dr. Bastian's regret is not unfounded, that our otherwise beneficial influence in the country is marred for the sake of the opium revenue.

BROCA ON ANTHROPOLOGY.*

ANTHROPOLOGY is that science which has for its object the study of the human group considered in its *ensemble*, in its details, and in its relations to the rest of nature.

Before this science was definitely constituted, the word anthropology had received several other acceptations, and in point of fact man may be studied from several standpoints. The ancient Greek philosophers were frequently called anthropologists (*ἀνθρωπολόγοι*) because they discussed "the nature of man," which, according to some meant the mind, according to others the body. Hippocrates, *περί φύσεως ἀνθρώπου*, commences with the following significant phrase, "Those who are accustomed to hear the nature of man discussed apart from medicine will find nothing satisfactory to them in this treatise." The name of anthropology was thus received in a variety of acceptations. With many modern philosophers anthropology is nearly synonymous with psychology, whilst other authors have published under the title of anthropology works relating to descriptive anatomy, to general physiology, or to hygiene. Some dictionaries define anthropology, the description of the human body; others, the natural history of

* We propose to publish, in this and in a future number, a translation of the greater portion of Dr. Broca's admirable article on "Anthropologie", which has just appeared in the *Nouveau Dict. Encyclopédique des Sciences Médicales*.

mankind. It is thus seen that it becomes necessary clearly to define the sense of a word which has received so many different acceptations.

Psychology, anatomy, physiology, hygiene, and even pathology, aid us in the knowledge of man in distinguishing him from other animals in characterising his general and his particular types, but neither of these sciences has any claim to the name of anthropology, since each of these separately only shows man from one point of view. Each of the above has moreover a name universally adopted, and if we think proper from some motive to rebaptise them, we should not give them a name more vague and less characteristic than that by which they are known. Let us add that all these sciences, without excepting psychology, might exist if we had never thought of studying man. Those who cultivate them have no doubt the main object of knowing their own nature. But most of their descriptions might, with some slight variations, be applied to other animals as well as to man; and we know that many great discoveries have been made both by the ancients and the moderns on creatures the zoological type of which differs much from our own. Psychology alone may with some show of reason pretend to the honour of being exclusively a science of man. And yet this appearance is deceptive, because animals possess, according to their respective species, an intelligence in which impartial analysis discovers, in a more or less rudimentary state, faculties and feelings analogous to our own of which we are so proud.

All sciences which concur to give us a knowledge of the nature of man are general sciences; they cannot, without losing their synthetic character and their philosophical scope, be restricted specially to the study of man. And if one of them so mutilated assumes the name of anthropology, it would belie its title; not merely because it makes known to us only a part of man, but it makes it known in an insufficient and frequently an incorrect manner.

It may now be remarked that these different sciences study man only as an individual. Even if by some impossible fusion it be attempted to unite them under the pretext that they relate to the same object, namely, the nature of man, this unique and complex science would still only be the particular history of the individual man, and would leave untouched all that relates to the collective history of the human genus. To give to such a science the name of anthropology would be to run counter to all rules of nomenclature. Zoology does not treat only of the animal, but of the animal kingdom. Ornithology does not treat of a bird, but of the whole class of birds; and in the same way herpetology, ichthyology, malacology, etc., have each for their object the study of a group of beings resembling each other by certain fundamental characters, whilst differing in some cha-

acters of minor importance. But humanity, also, constitutes in nature one of those groups where the unity of the fundamental type shows itself amidst innumerable varieties of a secondary character, and it is the science which studies this natural group, that is entitled to the name of anthropology, which no other science can protest against.

Anthropology might in a strict sense be defined "the natural history of man." This definition would not essentially differ from that placed at the head of this article ; it would even be sufficiently strict for such who look upon natural history as something more than taxonomy, pure and simple ; for the true naturalist does not confine himself to characterise the genera, species, families, etc. ; but he studies in each species, and if necessary in each variety, the manners, instincts, mode of life, geographical distribution past or present ; and anthropology might altogether, despite the complexity of its domain, find a place in this programme. But if we abstract some species which man has associated with his existence and his history, the remainder has been studied exclusively, or nearly so, in regard to their form and structure, and hence the description of anatomical and morphological characters constitutes the greater portion of ordinary natural history. It is different with the natural history of the human genus. Men by their intelligence, their language, their social and political life, their voluntary migrations, their conquests over nature differ so much from other animals, that in order to commence the study of this exceptional group, the naturalist is obliged to have recourse to a particular mode of investigation ; to historical, archaeological, and linguistic researches, which do not come in contact with other branches of natural history. To say that anthropology is the natural history of mankind, might in most minds give rise to the idea that it is a purely descriptive science ; that it confines itself to distinguish and classify the various races according to their physical type ; and this interpretation must be carefully guarded against, and the more so, since there has been a time when anthropology, still in its infancy, was confined within such narrow limits.

The definition we have thought proper to adopt is more significative, and it has, moreover, the advantage of indicating with sufficient precision the three great series of facts, the reunion of which constitutes anthropology. We may, in fact, bring all the studies relating to the knowledge of the human group under three heads.

1. It is first necessary to determine the position of this group in the series of creatures ; a question apparently very simple since the supremacy of man over all other animals is incontestable. It is, nevertheless, very difficult to be an impartial judge in our own case, and the study of this question proves it. Pride, one of the most cha-

racteristic features of our nature, dominates in many minds over the calm testimony of reason. Like the Roman emperors who, intoxicated by power finished by looking upon themselves as demi-gods, so the king of our planet imagines that the vile animal, subject to his caprice, has nothing in common with his own nature. The vicinity of the ape inconveniences and humiliates him ; he is not satisfied with being the king of animals, but desires to establish that an unfathomable chasm separates him from his subjects, and turning his back upon the earth he takes refuge with his threatened majesty in the nebulous sphere of the *human kingdom*. But anatomy, not unlike the slave who followed the car of the victor, exclaiming, "*Memento te hominem esse*," anatomy disturbs him in this self-admiration, and reminds him of the visible and tangible reality which allies him to animality. The doctrine of the human kingdom is then placed side by side with another not less radical doctrine, which pretends to derive man from the ape, and between these two extreme opinions others arise, which, according to a more or less rigorous interpretation of anatomical characters, present the human group as constituting now a species, now a genus, or a class, or a branching-off of the zoological series. A critical examination of the contradictory arguments adduced in favour of these different appreciations, leads to study on one hand the characters common to man and the animals nearest to him, and on the other to find out such characters as are peculiar to man. It becomes, moreover, necessary to see to what extent these analogies and differences agree with the laws presiding over the serial distribution of the groups called genera, species, families, etc. ; to investigate whether the gradation which obtains in a lower scale is preserved in a superior scale ; to mark the distance existing between the highest term of the simian and the lowest term of the human series, and to examine the arguments of those who do not consider that distance impassable. That portion of anthropology which comprises the study of these zoological questions is entitled to the name of *Zoological Anthropology*, and may be defined *the study of the human group, considered in its relations to the rest of organised nature*.

II. The human group once characterised, circumscribed, and classed as a group in its *ensemble*, must then be considered by itself ; it must be divided and subdivided, and each of these partial groups must be studied separately. This constitutes *Descriptive Anthropology*. Numerous physiological differences coincide with the physical differences. The muscular force, general sensibility, the degree of the perfection of the senses, specially of sight, hearing, and smelling, the mode of articulating certain sounds, the odour of the perspiration, the power of resisting heat or cold, the pathological aptitudes and

immunities, the period of puberty, the duration of female fecundity, etc., all these present in various peoples more or less extensive variations.

Finally, that which varies most is the degree of activity of the intellectual functions, the predominance of such or such a group of faculties, the development of the social condition and perfectibility, that is to say the aptitude, to originate or to receive progress.

Thus, whether we consider humanity as regards the external conformation, or the anatomical, physiological, intellectual, moral and social characters, we find considerable differences among the groups composing it. But, although the modifications of the different orders of characters do not always present themselves abreast, there are some which present a sort of solidarity. Thus, the obliquity and the projection of the face, constituting what is called *prognathism*, more or less black tint of the colour of the skin, woolly hair and intellectual and social inferiority are frequently associated, whilst a whitish skin, smooth hair, an orthognathous face, are usually the appanage of the more elevated peoples of the human series. Consequently, although the serial distribution obtains here as in other zoological groups, with its infinite gradations and degradations, its unions and its anastomoses, it is possible and even easy to distinguish between the innumerable variations of the human type, a certain number of secondary types, around which all these varieties group themselves with more or less precision.

As regards these varieties, they have received the name of *racés*, which engenders the idea of more or less filiation between individuals of the same variety, but which neither affirms nor denies the question of parentage between individuals of different varieties. The name *species* implies the solution of the question as regards the diversity of origin; the term *varieties* taken in the special sense attached to it in natural history, would on the contrary imply, that the whole human group forms but one species. From this results the inconvenience of speaking two different languages, according as one is monogenist or polygenist, and that neither of these terms is acceptable to such who look upon the problem of origin as doubtful. The word *racés*, on the contrary, may be adopted by all, and it is for this reason that it is now prevalent.

III. The third branch of anthropology, the last in the logical order of regular scientific evolution, but the first in importance, is *General Anthropology*, which has for its object *the study of the human group in its ensemble*. Here it is especially important to establish a line of demarcation between anthropology and other sciences which treat of man. All, without exception, furnish to general anthropology numerous facts, without which it could not exist. They make known

to us the individual man, and it is clear that a collection of individuals cannot be studied in its *ensemble* if we did not commence with the study of the individual type which forms the unit of the number. But general anthropology only borrows from the other sciences that which concerns man considered as forming part of a group. Some examples are necessary clearly to explain this distinction.

The study of the cerebral functions forms part of physiology. Those, for instance, who search for a certain relation between the volume of the brain and intellectual power, study a question which thus put is purely physiological. But if, instead of confining the comparison to individuals resembling each other by their physical characters, and differing in intelligence, we compare a series of individuals of a certain race with a series of individuals belonging to different races; if, in addition, we place the results of this anatomical parallel by the side of those notions we possess concerning the relative intelligence of these different races, we quit the territory of pure physiology and enter the domain of general anthropology, just as in treating of a subject of zoological anthropology, we study the same question with the object of establishing a parallel between man and the rest of animals. The description of the skeleton, the muscles, nerves, viscera, skin, etc., belongs to anatomy only; that of individual varieties equally so. But whenever an organ, either in form, structure, or volume, presents differences in various races, the history of these variations belongs to the comparative anatomy of races which is frequently put under contribution by ethnology, but which study in its *ensemble* belongs to general anthropology.

The study of cancer, tubercular affections, dysentery, yellow-fever, etc., forms part of pathology; but when the pathologist states that either of these diseases presents, according to race, differences in frequency, gravity and progress, and these differences cannot be explained from external conditions, but must be referred to the organisation of the respective races, he contributes to the progress of the comparative pathology of races which forms part of general anthropology.

Hygiène, which has for its object the preservation of health, is not a branch of anthropology. Even public hygiène, although it embraces questions relating to the health of a whole people or of a great number of peoples, is perfectly distinct from anthropology. But the hygienist, by studying the conditions favourable or noxious to the health of individuals or masses, is obliged to inquire how far the influence of media is capable of modifying the organisation; how far these modifications of the individual by external conditions may be capable of transmission from generation to generation, and these two questions form an integral part of the problem of races, one of the the most important of general anthropology.

The psychologist, who studies in himself or in other individuals the faculties of the mind, the feelings and passions, is not an anthropologist ; but who, extending the field of psychology, observes the differences existing between peoples and races in reference to intellectual power, perfectibility, sociability, artistic, scientific, literary, industrial, religious and political aptitudes, he participates in the work of anthropologists, and it is thus that the comparative psychology of races becomes one of the most interesting branches of general anthropology. It is unnecessary to multiply examples to show how general anthropology puts under contribution all sciences which have man for their object, without being confounded with these sciences.

Anthropology even borrows from sciences altogether foreign to the study of the individual man, but which still furnish facts concerning man as members of a zoological group. Climatology indicates the condition of the various media in which man can exist ; zoological and botanical geography make known to us the existence and the distribution of distinct *Faunas* and *Floras*, of multiple centres from which the actual species sprung, contrary to a general prejudice which derives if not all plants, at least all animals, from one focus ; and it is at once perceived how important the knowledge of this fact is for him who inquires whether the human genus had only one or several cradles.

Geology, in its turn, describes the gradual changes which have so many times modified the conditions of life on the globe, and makes us appreciate the immense time which must have elapsed between their different epochs, and the great antiquity of the quaternary strata which contain the remains of man or of his handiwork. And palæontology, finally placing man by the side of species he has survived, reveals to us the conditions of the existence of man in those primitive times, the record of which is lost.

General anthropology, towards which so many other sciences converge, embracing within its immense domain subjects of different orders requires different modes of investigation. The methods it adopts for the discovery of truth, are for each subject borrowed from the corresponding science, but as regards complex questions which encroach upon several sciences, and for such as belong to her properly, anthropology must follow her own principles and her own methods. We must dwell a little upon this point.

In truth anthropology, being a science of observation, has no other method than that of other sciences of the same family. But the modes of investigation vary according to the nature of the facts we desire to ascertain. Now the facts of anthropology are relative to collections of individuals and not to isolated men. In every race, in every family, there are individual variations, establishing sometimes be-

tween two brothers greater differences than such as exist between two men belonging to different races ; it is therefore indispensable to have recourse to such means of observation as shall obviate such a cause of error.

Two rocks must here be avoided. On the one hand, in endeavouring to determine the characters of a race, particularly in more or less exceptional cases, must not be capable of altering the general description. Nevertheless, on the other hand, if it be necessary to ascertain the mean type of a population, it is at the same time requisite to ascertain the maximum and minimum of each character were it only to learn whether it is a pure or a mixed race. Thus, even if it were possible to discern at first sight the individuals differing by one or several characters from the general type of the race, they must not be excluded from observation, since the study of these divergences forms an integral part of the description of that race ; hence the necessity of collecting a large number of observations, and to have recourse in the determination of each character to exact and uniform notations in order that the comparison of individual observations might yield methodical statements expressing the averages, maxima, minima, and if necessary, many other divisions. In order to effect this we ought to endeavour as much as possible to express by numerical signs the characters observed in each individual ; this is easy when, for instance, the length or absolute volume of an organ is to be stated. The results of such observations can then be stated in precise numbers easy to be calculated. The characters which cannot be determined by simple and direct measurement, may still in most cases be formulated either by indirect measurement, to which we shall recur, or by conventional notations. Thus, for instance, the shades of the skin, eyes and hair, despite their infinite diversity, may be reduced to a certain number of types or rather marks, represented on a chromatic table on which the graduated colours are respectively numbered. Thus, also, may the degree of the projection of an osseous protuberance, like the occipital protuberance, be expressed by progressive numbers from 0 to 5, whilst the degree of opening or fusion of the cranial sutures may be numbered from 0 to 3. These notations are conventional. It is clear that if zero expresses the total absence of the occipital protuberance, or of the suture, the number expressing the maximum development of either, is an arbitrary selection, as regards the number of intermediate conditions which it may be desirable to signalise. But if the convention be accepted, the observations may be collected with sufficient precision and applied to methodic statements which, with some necessary precautions, may become statistical.

Indirect measurements, of which we have spoken, relate to the determination of certain angles, fictitious lines, and certain proportions. These are chiefly employed in the study of the head and the cranium. Sometimes, for the appreciation of the relative development of various cephalic regions, we measure the inclination of two lines or planes, sometimes by the aid of certain graphic processes, we construct point by point, curves afterwards subjected to geometrical constructions, the elements of which are measured by compass and the goniometer. The linear or angular measurements thus obtained, in which cyphers express the proportions of the two lines, readily submit to statistical calculation. But in order that these varied statistics should be well composed, it is above all things necessary that all observations should be collected according to a uniform process. In seeking for an explanation of the contradictory results published by different authors, we almost invariably find it in the diversities of their processes, or in the uncertainty of their marks. Nearly all the measurements may be taken by different methods. What, for instance, is the length of the arm? What are the points of the marks for this measurement? For one, the superior point of mark is the point of the acromion; for another, it is the inferior border of the great pectoral muscle; for a third, it is the most elevated part of the armpit. The inferior mark point has been alternately placed on the epicondyle, the epitrochlea, the small head of the radius, the summit of the olecranon, whether the forearm be stretched or bent. To these uncertainties must be added such as result from the position of the arm, for the same process of mensuration applied to the same individual may present a difference of more than a *centimètre* according as the arm is approached to, or moved from, the trunk. It thus becomes indispensable to adopt for each measurement a constant and invariable method sufficiently simple to be employed by all observers.

It is generally admitted that the method of averages, based upon a large number of individual facts, is the only one leading to an exact knowledge of a group of individuals. It has been asserted that all this apparatus of measurement and cyphers is unnecessary, and that it is sufficient to measure in each race a small number of individuals selected *with discrimination*, as being the representatives of the mean type of a race. We readily admit that a very sagacious and much experienced observer, gifted with such particular aptitudes as constitute a good artist, may, without much error, distinguish amongst the mass such individuals, generally not very numerous, who in themselves present a harmonious *ensemble* of the characteristic features of their race. Still such appreciations can never be absolutely rigorous, being entirely subordinate to the qualities peculiar to the observer.

The dates they furnish are merely personal ; they are neither demonstrable nor can they be discussed ; they may be received with confidence—a confidence frequently justified—but it leads to accept as true, delusive facts ; and it tends, moreover, to the restriction of sources of information, to adopt a method, the appreciation of which can only be successfully made by a select few of observers. The facts required by anthropology must be collected from all parts of the world, and with precision by all kinds of educated travellers. The method of individual observations, by means of simple and uniform processes, sheltered from the flights of fancy and repeated upon a large number of individuals taken at hazard, is thus the true basis of anthropological investigations.

This method is, however, only applicable to the facts of the anatomical order. But statistics, of which it is only a particular form, plays in anthropological studies a more general part. A large number of questions find in it a solution it would be vain to look for elsewhere. Statistics alone can demonstrate whether a race is progressing, in *statu quo*, or decaying. Some unquiet and chagrined minds have with complacency accepted a report propagated by our trans-Rhenan neighbours, that the French population, despite its numerical increase, has for some sixty years past degenerated. Some attribute this to the development of industry ; others to social revolutions, to vaccination, to the large consumption of potatoes, to tobacco, to alcohol, to universal misconduct ; others invoke a real cause and worthy of the attention of the legislature, namely, that the mode of recruiting the army condemns the tallest and healthiest males to a seven years celibacy, whilst the short and less robustious males marry and transmit to their offspring their defective organisation. There are also some, who accuse civilisation in general as violating nature and thus gradually tend to the decay of humanity. Of these various hypotheses some are altogether paradoxical, others puerile ; some are founded upon grave facts, although too partial to seriously affect a population of thirty-nine millions of men. We must, however, before all, in order not to discuss the history of the golden tooth, ascertain whether it be true that since the beginning of this century height has diminished in France, and statistics alone can answer this question. This has been done by M. Boudin, and he has demonstrated that from 1831 to 1860, the only period of which we possess precise and complete documents, the height of the conscripts has been continuously on the increase.

The decay of a race, which must not be confounded with degeneration, for the latter may be compatible with a numerical increase, whilst the former is characterised by a continued diminution of births,

or the continued increase of mortality. This decay of a race cannot be measured, and frequently cannot even be revealed by statistics. When, for instance, the population of a colony increases, we are apt to conclude that the immigrant race is prospering, whilst in many cases it only maintains itself by constant reinforcements. Statistics, by comparing the number of births with that of deaths, destroys such illusions, and thus we arrive at the solution of the question acclimatisation or non-acclimatisation of certain races in certain climates. It has thus been demonstrated that European races cannot maintain themselves in Africa and tropical Asia, and doubts have even been raised as to the possibility of colonising certain parts of Algeria by Frenchmen. Here, again, it is by the aid of statistics that we are enabled to appreciate the influence of race and climate on the duration of life, the comparative frequency of the principal diseases, and specially such as cause the greatest mortality. Statistics, finally, is a means of studying the effects of consanguinity ; but here the subject is so complex that we must have recourse to other sources of information.

There are a great many questions of a still more complicated nature, which do not lend themselves to the application of rigorous methods. We need not on that account renounce giving them a scientific solution, but an increase of difficulties requires an increase of caution. The uncertainties arise chiefly from the multiplicity of elements combined in each case under consideration ; various influences which have, or might have, concurred in producing a definite result. The mind then indulges in various hypotheses, and feels disposed to adopt that which accords with a preconceived doctrine ; but it ought to resist such a tendency because facts are not subordinate to doctrines, but doctrines are subordinate to facts. When a physiologist finds himself in the presence of a complex phenomenon which gives rise to various hypotheses, he has recourse to the analytical and experimental method. He considers one by one the various conditions of this phenomenon, isolates them by vivisection or any other process, he successfully eliminates the false hypothesis, and finally succeeds in finding a true explanation. Anthropology must follow the same principles ; it cannot apply them in the same manner, as neither a race nor a collection of human beings can be subjected to scientific experiments ; but he profits by the experience derived from all parts of the globe, where immigrations, conquests, revolutions of all sorts, more or less modify the conditions of life. When he searches for the interpretation of a fact, he unites and compares all the analogous facts, produced in different places, under different conditions ; he analyses these conditions, then eliminates all the

explanations not applicable to the entire series of similar facts; he more and more simplifies the question until the solution is derived from this analysis.

[*To be continued.*]

THE PRIMITIVE PERIOD OF THE HUMAN SPECIES.*

By CARL VOGT.

It is proper that, in a new organ for the natural and primitive history of man, the starting point from which it proceeds should be well fixed and in outlines, at least, the position defined, which science occupies in relation to certain questions. It cannot be our purpose here exhaustively to treat a subject still under investigation. Our object is rather to seize some prominent facts which may serve as boundary-stones, between which the subordinate results may be arranged. We cannot conceal from ourselves that such a selection presents difficulties, since on the one hand the number of discoveries daily increases—nay, owing to the extraordinary zeal with which the investigations are carried on, they swell to an enormous mass; whilst on the other hand facts apparently insignificant come to light, which by subsequent discoveries acquire the greatest importance. Here, it must also be confessed, our knowledge is, more than on other questions, patchwork, so that in arranging the results we in some degree resemble the artist who is engaged in re-arranging the scattered little variegated stones of a destroyed mosaic pavement. It cannot fail that in such a work many errors of association must occur, and that a recovered missing stone may upset the whole combination. But such cases are also instructive, inasmuch as they invite us to caution and to close examination.

My purpose at present is to treat of the oldest documents we possess relative to the existence of man, without reference to periods approaching historical events. I therefore, putting aside the so-called bronze-period, shall exclusively speak of the stone-period, during which stones, wood and bones were the three chief materials of which implements were constructed. I do not so much purpose to cite the facts, as critically to examine, how far the findings are trust-

* This article is a translation from the *Archiv für Anthropologie*, and we have given it a place in our pages as a specimen of what our admirable contemporary is publishing.—EDITOR.

worthy, and how far we might succeed from the results obtained, to determine the period and the progress of civilisation in primitive times.

It never occurred to me, as some have done, abruptly to divide stone, bronze, and iron periods. Some little reflection clearly leads to the assumption that on the introduction of a new element of culture the preceding condition cannot cease at once. Whether bronze was in our part of the world independently used, or whether, as seems more probable, it was introduced by a more civilised people on the shores of the Mediterranean, or from the coast of Africa; this much is certain, that bronze made its way but slowly, and that stone and bone implements remained in use long after the introduction of bronze articles by trade, and even after such articles were fabricated in the respective countries themselves. The Homeric heroes, who knew bronze and iron, threw stones at each other, and the sling was, in not very remote times, a legitimate war weapon. It also appears that stone implements, even after they had disappeared from general use by the introduction of metals, retained an odour of sanctity, so that stone-knives and stone-hatchets were used in religious ceremonies, it being considered that metal which required so much human labour was rendered unclean by so much handling.

But are we from this transition of one epoch into another justified, as some have done, in inferring that no preceding distinct epoch had existed, and that when in certain spots we only find stone and bone implements, it was merely accidental that no bronze was deposited? It would be foolish to deny that in some cases this may have occurred. But if, on the other hand, the results of many researches agree that there were periods of culture which did not betray any trace of the knowledge of metals, and that stone and bone implements were exclusively used for purposes to which at later periods metal was applied, every unprejudiced inquirer must at once admit that such an epoch has really existed, and that we even distinguish in its progressive periods of development, civilisation.

It may be that a grave, for instance, containing only stone implements, belongs to a comparatively recent period, especially as on account of the above mentioned religious character, these stone implements were perhaps preferentially deposited. But the absence of metal loses its accidental character, when we meet with numerous settlements or stations, when hundreds of caves or graves are explored, where not only metal is entirely absent, but where the discoveries of remains of foreign species of animals, testify to a state of culture resembling those of savages subsequently discovered.

In mentioning savages I must be permitted to offer an observation.

Certain as it is that stone, bronze, and iron periods only form relative sections continued into one another, it cannot be assumed that similar civilisation epochs were simultaneously developed in different parts of the globe. In other words, even in the limited area of Europe, there may, on the coasts and on rivers, peoples have existed, further advanced in civilisation, who knew of and how to use metals; whilst in the interior of the country tribes dwelt, who for centuries, perhaps, had no idea of metals, not unlike the savages of islands who used stone weapons until Europe supplied them with iron, lead, and powder. It is therefore, in my opinion, improper to associate the findings of different countries, lying so far apart, instead of only comparatively treating them, and at first merely approximately to determine the period of the development of a given civilisation. It is, for instance, imaginable that in the Alpine highlands, especially in the northern declivity of Switzerland and the adjoining regions, the knowledge of metals was unknown to the pile builders; whilst around the Mediterranean, and specially on the southern and eastern coasts, the knowledge of metals was generally diffused. The more therefore these researches extend, the more must they be applied to definite regions, and be confined within narrower limits in the comparison of results, within which an arrangement of such results becomes possible.

Since the publication of my *Lectures on Man*, which were not exhaustive, but merely to further researches, materials have in all countries wonderfully increased. Efforts are now making in all parts of Europe, to dig up the treasures concealed in the soil, and new finds are brought to light which supplement the existing. In referring to what is known I shall confine myself to what is essential for the purpose of connection.

The minute exploration of caves and their contents has been carried on with great zeal, specially in France, and also in Italy and Belgium. Everywhere have the researches been carried on with the avowed object of arranging the obtained results in their proper series. The contents of a cave are no longer, as formerly, considered as a whole, but a distinction is made between natural deposits and the changes produced by man in different periods. There is no doubt that many caves have been filled up solely by brooks and streams, which reached the elevations at which the entrances to the caves are now found. In some caves we have succeeded to determine the intermediate periods of successive deposits differently characterised.

But although there are many caves recognised as containing deposits in their original natural condition, it cannot be denied that there are many other caves in which the original deposits have been disturbed

and mingled with products belonging to later and recent times. Many caves served as places of sepulchre or refuges in troublous times, or as dwelling places for hunters, shepherds, etc. In the places for refuge the dwellers left behind, their fire-places, portions of their meals, and implements which mingled with the relics of remote epochs. Beasts of prey inhabited the caves, and introduced into them bones of animals. There are thus caves containing samples of prehistoric and historic periods, which are apt to throw suspicion on the results of other investigations. Fortunately most investigators are at present fully alive to this difficulty, and by close attention endeavour to prevent any confusion. Where the natural deposits present themselves clearly and perfectly, where the stalactites which separate generally the deposits are perfectly uninjured, and where no trace is found of any disturbance we are justified in assuming that the finds are genuine, especially if they be of such a nature as to show a decided difference in the various periods of deposition. However reliable cave finds may be in normal cases, the severest examination is requisite to avoid errors. Where we have the least doubt whether we are in the presence of undisturbed original deposits, we ought to be careful in drawing conclusions from the facts. On the other hand, it appears to us foolish that because caves have been found disturbed no valid results can be obtained from the exploration of caves. This appears to me not unlike the assertion that because there are some churchyards in which after some thirty years the old graves are again made use of, all old churchyards must necessarily contain bodies of a recent period. There are, nevertheless, unquestionably churchyards in which for centuries no corpse had been interred, and where we may be sure that all objects found in them, of whatever kind they might be, must date from a period preceding the abandonment of the burial place. Just so with the caves. If we find in the soil beds containing only bones of the cave bear and cave hyæna, and other contemporaneous species, and above them an undisturbed stalactite roof, and above this another deposit of reindeer bones, and those of other animals contemporaneous with the reindeer; it would be impossible to find more convincing proofs of two successive periods differing from each other in their fundamental characters.

Of not less importance is the examination of the beds of the so-called diluvium, the conventional name of which conceals a sense which modern geology can no longer recognise. It must be insisted upon that no geological fact is in the least capable of affording any proof of a universal deluge in a comparatively recent period at all approaching historical times. All the facts, of whatever kind they may be, merely indicate deposits which, in the existing valleys, rose to a

comparatively small height, partly owing to changes of level, and which, though considerable for the respective regions, are insignificant when taken on the whole. It is now proved by incontestable evidence that the so-called diluvial period lasted a comparatively immeasurable long time within which the expansion of the glaciers induced great changes on the surface of Central Europe, and which preceded the arrival of man.

On referring to the various climatic conditions which obtained during this period, we observe that a great portion of Central Europe had at that time, in relation to climate and the *Fauna* and *Flora* depending thereon, an insular character resembling in some degree that of the southern islands of New Zealand. The glaciers could thus descend from the mountain heights into the valleys, where there existed a southern vegetation, and the elephant and rhinoceros could find the means of existence at the foot of the glaciers despite the adjoining ice mountains. When we consider that the glaciers surrounding Mount Cook, in New Zealand, descend to the region of ferns and palms, because the insular climate preserves them by the great quantity precipitated from the heights, whilst by moderating the heat of the summer it prevents their melting, we ought not to be surprised at finding in the circumference of the Alps in the diluvium produced by the glaciers elephant bones, or doubt that these regions were at a former period inhabited by pachydermata.

Whilst the exploration of caves presents peculiar difficulties, those attending the explorations of the diluvium are not much less perplexing, which is abundantly proved by the lively discussions on this subject in the French Academy. There are two special conditions which require our attention. First, the local difference of the deposits. In this respect we may say that not merely every country, but that every river bed and every valley has its own law. That there was a deposit here and none there; that the character of these deposits (gravel, sand, mud, etc.) varies and alternates greatly; that even deposits in adjoining localities, manifestly formed simultaneously, may present entirely different characters. It is, therefore, exceedingly difficult to parallelise the various deposits characterising the diluvium, and for the present, at least, to determine the chronological succession in which certain formations of different countries stand to each other; especially as the stratification which guides us in elder beds is in the diluvium very confused, and offers no certain basis for tenable inferences.

Another difficulty has been pointed out by Chevalier De Beaumont. Diluvial formation is constantly taking place; every little brook carries off some particles into the depth. That this restlessness, so to speak, of the earthy particles by the influence of the water acts also

in the depth, has been proved by the exploration of sepulchres, when it was found that the slightest gap in a sarcophagus was sufficient to give rise to accumulation within, which gradually not merely displaced the bones but by pressure changed their forms. The alluvial formations of the slopes, as Elie De Beaumont calls them, are, no doubt, continuous, and deposits may thus take place which, coming from heights, may present features of being older than they actually are.

We must, however, not forget that these phenomena are well-known to the geologist, and that we no longer live in the infancy of the science, when surprise was felt that, for instance, in the lower tertiary strata of Paris sea-urchins were found which belong to the chalk, but had been carried off and deposited in the tertiary strata. It cannot, therefore, be denied that alluvial formations still take place in which the products of former and later periods are commingled. Thus a river running through sand-banks belonging to different periods of formation, may mingle portions of these sand-banks in a new alluvial formation; but a minute examination of local conditions will also here lead to a satisfactory answer to questions of this kind. If above such deposits, accumulated in slopes, later deposits are found bearing a well defined periodical character, we may at least assume this much that the lower beds must belong to an older epoch.

The peat moors have contributed much to throw light upon certain periods of civilisation, and have yielded rich and genuine results, but unfortunately they reach only to a certain period. In the oldest period here treated of they were not inhabited, and can, therefore, afford us no clue; but they acted as excellent preservers of objects of later periods. It is true that it may give rise to a source of errors, because heavy objects especially may, in the peat moors, sink so deep as to be believed to have originally belonged to this stratum. But this sinking cannot be appealed to when we come to settlements with piles driven in the subsoil. With regard to an individual tree hollowed out for a boat, like that of the Nidan-moor, which caused M. Franz Maures to sing a song of triumph, there may be doubts which, however, must vanish before universal phenomena. If, therefore, peat moors give, as regards a relative period within which the deposits took place, a satisfactory explanation, I cannot help again drawing attention that in the peat moors alone we must look for the determination of the actual period within which the pile villages existed. Although we all at the present time in botanical and chemical respects very nearly understand the formation of peat, still the question of the growth of peat within a definite time is by no means solved. We neither know generally within what time a stratum of peat one foot thick may grow, nor do we possess any scientific data to calculate the quantity of

growth within a given time of any individual peat moor. That the growth must differ in various moors; that even in a given locality they must have differed during certain periods is easily imaginable; but I repeat that by minute researches in individual peat moors, which are as yet entirely wanting, we may succeed in establishing chronological determinations of the age of pile buildings.

We can only assign to the deposits in the open lakes a secondary rank to those of the peat moors, as regards the certainty of results. Although this kind of fishing is now carried on with the greatest zeal, nay, with a certain passion, it is clearly perceivable that the openness of the lakes must, in such places where settlements existed, have mixed products of different epochs. The celebrated Steinberg of Nidan has existed as a settlement from the stone to the iron period; it is impossible to assign to any object found there a chronological date.

Old graves form another source of our prehistoric knowledge. It will, indeed, have to be acknowledged that in the most primitive times burial places, properly so-called, were unknown, and that care for the dead of relations already indicates a progress of culture even before the development of religious feelings. Burial places with their contents will, therefore, although open to chronological doubts, present to us a greater interest, since the rarity of skulls in other deposits obliges us to seek for them in burial places.

The chronological question is a very important one. That these investigations concern a primeval period, of which even tradition renders no account, is now generally acknowledged; nor can it be contested that the existence of man can be traced at least to an epoch during which extinct species of animals inhabited our continent. But between this starting point and historical times intervene a series of periods or epochs which are to be partly demarcated and chronologically determined. What means do we possess for such a purpose, and what results have we already obtained?

I have already in my *Lectures* indicated that the chronological attempts of Gilleron, Morlot, and Troyon in Switzerland have no pretensions to scientific accuracy, and although this may not altogether apply to the excavations of Hekekyan Bey in Egypt nor to the computations of Dr. Dowler, of New Orleans, even these are open to criticism. These experiments lie rather outside of accurate supervision, and although I am perfectly convinced that the computations to which they lead are not exaggerated, I would not altogether rely upon these foreign results. They constitute, however, at present the only attempts chronologically to determine prehistoric times, and should find grateful acknowledgment, even if unsuccessful.

In the absence of a chronological determination of periods, we must be permitted to follow a method applied to geology. We do not in geology ask how many years have passed since this or that stratum has been formed, and for the simple reason that, even if an answer were possible, the standard at our command is insufficient. What we ask is, whether a stratum has been formed before, after, or simultaneously with another given stratum? To answer this question, we possess the same means as geology; and these must be applied to determine the chronology of prehistoric human epochs. The determination of the relative epochs within which a deposit belonging to prehistoric periods had taken place, belongs exclusively to the geological method; and I do not hesitate to ascribe many of the contradictions in this respect, solely to the ignorance of the respective authors of the proper geological method. In order to show this, let us examine the means applied to geology, and their relative value.

The geological character occupies the first place. Here is a stratum of red sandstone overlying a stratum of grey limestone, and beneath a layer of light grey lower muschelkalk (Wellenkalk). At some distance I find exactly the same red sandstone, in the same relative position between these two limestone strata; surely I cannot hesitate to assume that the two sandstone strata had been deposited at the same time, and at the same relative period, before the light grey "Wellenkalk" and the smoky grey magnesia limestone. The geological character thus partly depends upon the mineralogical property, and partly upon the relative position to other known strata. This character may surely be applied to the determination of the various beds in the diluvium. When Prof. Fuhlrott shows that in a grotto of the Neander valley there exists a lehmbed, containing a number of fossil bones and rolled flints, and that this layer corresponds exactly with the lehmbed in which at some little distance the famous Neander skull has been found, this concordance of the geological character affords, if not absolute certainty, at all events the greatest probability, that the Neander skull belongs to the same period in which the animals lived whose bones were found in the so-called Devil's chamber. There can, therefore, be no doubt, that the geological character has a claim to great importance, provided that it refers to localities at little distances from each other, and manifestly subjected to the same conditions. But the geologist who, from the resemblance of the deposits in the Devil's chamber and the Neander grotto, infers their contemporaneous formation, owing to their being scarcely one kilometer distant from each other, this same geologist would, at all events, hesitate to extend such an opinion to Belgian or Franconian grottos; and for this reason, that experience has taught him that de-

posits of more or less variegated lehm with rolled flints, may have taken place in different localities at different periods. Here, therefore, the geological method finds its limits; applied to limited spaces, it affords reliable facts, which may lose their value as regards distant regions.

I look upon the palæontological character as affording much greater certainty in regard to the inferences which may be drawn from the organic remains found in prehistoric deposits. Let us explain. The distribution of animals and plants upon the globe is not the effect of accident, but the result of local conditions and historical traditions. These latter afford a reason why, in spite of favourable conditions, certain animal forms have not been developed. I must show by an example what I mean. An experience of three centuries has shown that America is an excellent field for horses; nevertheless the type of solipeds did not exist in that part before its discovery. The finding of horse bones in an alluvial bed of America, would therefore irresistibly show that this bed has been forming after the introduction of the horse by Europeans; whilst the original absence of the horse type proves that, at the time when solipeds were developed in the Old World, they had no access to the New World. The extinct species, the emigrated forms, still existing in other parts of the globe, the domestic animals gradually acquired, offer a like certainty in relation to the determination of a relative epoch, as the horse bones in the above example. Their bones found in the deposits, are speaking witnesses that they existed at the time the deposits were forming, and offered, therefore, the surest indication for determining that period.

This applies equally to plants. The changes in the flora of Denmark during the prehistoric period have been accurately traced, and, although computed by the elements of the present flora of Central Europe, they are still determinative for certain epochs. The same may be asserted of the pile-work periods in Switzerland and Italy. Even the relative frequency of many plants, as well as the cultivation of edible plants, partly taken from the primitive flora, partly introduced from other countries, may serve for an accurate determination of definite periods. The continuation of such researches, as pursued by Lartet, Rüttimeyer, Croizet, and Heer, will afford important contributions to the question of determining the periods to which the finds belong.

At present we cannot assign to the anthropological character, namely, the quality of the human bones, and especially of the skull, such importance as regards the determination of age, as possessed by the preceding elements. It certainly seems that already, at the beginning of man's appearance in Central Europe, as far as we know, several cranial types opposed each other, and that several of these

types succeeded each other in the peopling of certain regions. But, with the scanty materials for the craniology of the olden times, and the duration of the various cranial types, which manifests itself by the intermixture of immigrants with previously existing tribes, the examination of a single or of several crania can scarcely lead to a sound inference regarding the relative age of the same. The masterly investigations of His and Rüttimeyer on the Swiss cranial types and intermixtures in the Romanic districts, show what interesting results may be obtained; but they give no accurate information concerning the period in which these cranial types appeared. Let us instance that much talked of Neander skull. Its great antiquity is proved, as already stated, by its geological character. The dispute is whether it be a pathological product, an abnormality produced by premature synostosis, or a normal form. The balance inclines to the latter view, for there are many skulls presenting an early closure of the sutures, without showing the particular form of the Neander skull; and there are also skulls very much approaching the Neander skull, showing no such early closure of the sutures. We therefore assume that the Neander skull belongs to the highest antiquity, and to a peculiar type. Do we, then, say that every cranium of this kind which may be found must belong to that period? By no means. This Neander people have propagated like other peoples; they surely have intermixed more or less with other tribes; and, although it has disappeared as a tribe, be it by gradual extinction or by transformation of its original cranial forms, there have remained remnants which, partly by atavism, have continued down to a recent period.

Finally there comes, so to speak, the industrial character, which is important so far, inasmuch as the introduction of metals, of bronze and iron, must have caused a great revolution in the public and domestic life of man. That this change could only be gradual, that the old implements continued in use for a long time after more perfect instruments were manufactured is clear enough. We have seen even in our rapidly-progressing period that it is perhaps easier to effect a revolution in our government than to change domestic arrangements. If we proceed still further, and endeavour to determine different periods from the polish and workmanship of stone implements, the results will scarcely be in accord with the requirements of accurate investigation. Man with every progress he makes has a desire to render his existence more agreeable. He will therefore at first hammer away and sharpen the edges of his rude hatchets, then polish them; he will then with this knife, work, carve horn, and he will do so in proportion as his struggle for existence leaves him time for apparently useless occupations. But as in our present civilisation epoch there are many

regions where man requires his whole time for the acquirement of the necessities of existence, so must it in greater degree have been in primitive times; and thus it might have come to pass, that whilst in one district civilisation had sufficiently progressed for the manufacture of more perfect implements, those of adjoining districts were still in a rudimentary condition. Do we not possess an instance of this difference in the settlements of Concise on the Neufchatel lake and the implements of Middle and Eastern Switzerland? If these settlements were overlying each other, if above the rude implements of Robenhause were found the neatly worked implements of Concise, it would at once have been inferred that we had before us two successive culture epochs. Nevertheless these settlements might very easily have co-existed, although in one civilisation appears to have made greater progress than in the other.

In shortly recapitulating what we have said concerning the method to be applied for solving the problems in question, we come to this general inference; that no single character possesses an absolute value, and that only by the combination of all, with special reference to circumstantial conditions and limited localities, valid conclusions may be arrived at. When the facts shall have accumulated to such an extent that they embrace countries hitherto unexplored, and of which some had in certain respects attained degrees of civilisation before the already explored regions, then shall we be able to penetrate deeper into the mysteries of the primæval history of our species.

We must now be permitted to enter upon the results hitherto obtained. If partly in contradiction with the views we have advanced, we still divide them into sharply demarcated periods, it is not because we believe in no transitions and intermediate periods, but simply from the necessity of succession and separation.

If, then, we speak of cave-bear or reindeer periods, we protest at the outset against the assumption that the first reindeer was born on the day the last cave-bear died. We are permitted to assume that the form of the cave-bear has been gradually developed into that of the common brown bear; that the reindeer, which was partly contemporaneous with the cave-bear, and acquired greater importance for man, disappeared, like the cave-bear, but gradually, and retired very slowly from the south to its present habitation. These epochs we denominate, according to the chief character they represent, transition periods: we acknowledge their importance as forming the central reflex of a long period.

The oldest traces of man, if they can be attributed to him, have been laid bare by M. Desnoyers in the sand of Saint-Prest, near Chartres. This sand-pit is situated on the banks of the Eure,

covered above by lehm of considerable thickness ; then come beds of rolled flints and rounded blocks of sandstone, pudding-stone, white sand, mingled with rolled flints ; then very fine sand resting upon chalk. This mode of stratification, that of the sand deposits in which the bones of large mammals are found, is unquestionably older than the diluvial formations occurring in this country or in other districts of France, and that they belong to the upper tertiary strata found in the valley of the Arno, in France and England. The Norwich crag and the deposits of Grays-Thurrock and Ilford in the Thames valley, which at all events were formed before the glacial period, belong to the same period. In the known Norfolk cliffs, near Cromer, in the so-called forest-bed, and unquestionably underlying the glacial mud, there are found, according to Lyell, the following plants as determined by Heer: *Pinus sylvestris*, *Pinus Abies*, *Taxus baccata*, *Prunus spinosa*, *Menyanthes trifoliata*, *Nymphaea alba*, *Nuphar luteum*, *Ceratophyllum nemorosum*, *Potamogeton*, *Alnus*, and *Quercus*, and bones of the following animals, as determined by Falconer, Owen, and others: *Elephas meridionalis*, *Elephas primigenius*, *Elephas antiquus*, *Rhinoceros Etruscus*, *Hippopotamus (major?)*, *Sus*, *Equus (fossilis?)*, *Bos*, *Cervus capreolus (?)*, and other species of *Cervus*, *Arvicola amphibia*, *Castor trogontherium*, *Castor Europæus*, and *Cetacea*. In the valley of the Arno were found, *Elephas meridionalis*, *Rhinoceros leptorhinus*, *Hippopotamus major*, large oxen, stags, and one horse, all differing from the species found in the alluvium. At St.-Prest were found, *Elephas meridionalis*, *Rhinoceros leptorhinus*, *Hippopotamus major*, several species of deer, one of which, on account of its resemblance to the large Irish deer, was called *Megaceros carnutorum*, whilst the teeth of the other species of deer quite resembled those found in the Arno valley ; further, one horse and one species of ox, corresponding with those found in the Arno valley, and also an extinct species of rodent of the size of the beaver, called by Laugel *Conodontes Boisviletti* ; there obtains, therefore, despite of the difference in localities, a concordance between the deposits, so that, on geological principles, the contemporaneity of these deposits in England, France and Italy is undoubted. Whether these deposits are belonging to the upper tertiary, so-called pliocene, or to the diluvial formation, is a purely theoretical and idle question, inasmuch as the division of the formations usually adopted in geology are purely arbitrary. But the relative age of these deposits is sharply demarcated. The deposits in Norfolk and at Saint-Prest prove that they have unquestionably taken place before the glacial period, and before such formations in which the later contemporaries of man—the cave-bear, the mammoth and *Rhinoceros leptorhinus*—have left us their bones.

If the proofs for the existence of man were as convincing as those for the age of these animals, no one could doubt of his great antiquity. But these proofs only consist of carvings, lines and stripes, certainly not unlike those found in caves and kitchen middens carved on the bones with flint knives. The crania of the large deer are almost all at the root of the antlers, broken as from a blow on the frontal bones, in the same way as Steenstrup has found in certain deposits, and as is still practised by the Laplanders. The antlers are broken into two pieces, apt to form handles of implements. The incisions are specially marked on the long bones of the elephant, but also on those of the rhinoceros and hippopotamus. That these incisions existed upon the bones before they were covered with sand, is proved by the sand being fixed in the incision, so as to refute the objection raised at the Ecole des Mines of Paris, that these incisions were caused by scratching the bones with iron instruments. Besides these incisions, there are seen in these bones other light scratches, which Desnoyers attributes to the friction of flints.

Whosoever has once seen bones from caves, pile works and kitchen middens, from which the flesh and the tendons had been removed by stone-knives, he cannot fail to mark the resemblance to the incisions discovered by Desnoyers. The experiments suggested by Lyell have however established that similar incisions might be produced by large rodents, and as such rodents are not altogether absent in Saint-Prest, the discoveries of Desnoyers have lost much of their validity in relation to the existence of man in the tertiary period. It must certainly be added that prejudice only, and not a rational contemplation of nature, can adduce well grounded reason against the existence of man in that remote period. If man at this day can inhabit the same countries, by the side of the elephant, the rhinoceros, hippopotamus and similar beasts, why should he not at a remote period have found the condition of his existence by the side of these animals? This epoch of the primeval period, if it should be confirmed, might be called the epoch of the southern elephant (*Elephas meridionalis*).

Since the first undoubted traces of man consist of rude flint implements, so-called hatchets and knives, and later of bones, found in the diluvium of the Somme valley, we shall treat of these first. These kinds of deposits may be designated as the epoch of the cave-bear and the mammoth.

There is no doubt that all such deposits of Central Europe, in which whole skeletons and limbs of the mammoth and the fossil rhinoceros are found, correspond with that epoch in which, around the Alps, the glaciers began to retire. But if this be a fact, doubts certainly may arise whether these diluvial formations, in which flint

implements are found, really belong to the mammoth beds, or whether the teeth of the pachydermata, and other bones found in them, might not have been carried away by the waters from other localities and deposited in the spots where they are found. The geological character was therefore doubted, because it was assumed that the diluvium in which the implements were found had been produced from the destruction of earlier mammoth beds, and was consequently of a later origin. But as the diluvial formations in the river valleys present the general character of stream formations, as they without exception consist of rolled flints, sand and gravel, and present that confused stratification peculiar to river deposits, this view seemed plausible. The thickness of more recent strata which cover the sandbanks containing flint implements could not well be invoked as a proof for their age, it being known that rivers frequently change their beds, and may within a few centuries in some spots accumulate deposits, whilst in other places they carry off huge masses in order to redeposit them lower down their banks.

The geologists who had studied the superficial formations, especially of France, had a full right to invoke the parallelism of the strata; they called to mind that the various deposits in adjoining regions presented the same succession as regards the composition of the banks of variously formed rolled flints. But all these considerations afforded only probability, not certainty. An Italian naturalist, B. Gastaldi, had therefore a perfect right to maintain that the finding of flint hatchets associated with mammoth teeth does not prove the contemporaneity of these deposits, which can only be proved if, as in Italy, whole skeletons, or at least all the bones composing them, are found in one spot. Single teeth and other bones may, like rolled flints, be carried off and deposited elsewhere by streams, whilst the deposit of a skeleton or bones in their relative position proved at least that the whole body, kept together by skin, muscles, and sinews, had been deposited. It did not occur to B. Gastaldi that when he raised this objection it had already been refuted as regards the Somme valley. These deposits, at Cuvier's time, already passed for the richest localities in which bones of the mammoth and fossil rhinoceros were met with; and more than thirty years ago, a Monsieur Baillon has, in the sands of Menchecourt, which yielded many stone hatchets, found a perfect hind foot of the rhinoceros, the bones of which were found in their normal position, whence Baillon justly inferred that these bones, when they were deposited, were still united by muscles and tendons. The skeleton of the whole animal to which this foot belonged was at a short distance from it. At the time when this discovery was made and published,

the existence of hatchets in the same bed was not even anticipated, nor its relation to later discoveries.

Very recently a perfectly valid confirmation of this deposit was found on the banks of the Manzanares at Madrid, in the vicinity of San Pedro, by Casiano de Prado. The stratification is as follows. Immediately beneath the vegetable earth lies a confused mass of sand and rubbish, with few rolled fragments, of the thickness of 7 mètres and 80 centimètres, overlying a lehm stratum 30 centimètres in thickness throughout. Then comes a layer of sandy lehm 70 centimètres thick, in which, in the year 1850, was found an almost perfect skeleton of an elephant, the bones of which were partly in their relative positions. About four or five years ago were found, in the same stratum, bones of a mammoth in a similar condition. There can, therefore, be no doubt that the waters which deposited this bed had carried off the whole bodies of these elephants, and that consequently the bed was deposited at the period when elephants lived in the vicinity of Madrid. Under this stratum was found a mass of rolled stones three mètres in thickness from the underlying tertiary formation, in which were found flint hatchets resembling those of the Somme valley, being neither polished nor sharpened, but solely formed of fractured flint lumps. This discovery removed every doubt. We might, from the overlying strata infer that the man who made the flint hatchets existed even before the mammoth, were it not that we find everywhere proofs that the beds which, beneath present rolled flints, but above a finer material, have been formed in the same epoch, although in different successive times.

The geological character of this first epoch being determined, the palæontological character is no less so. It is unnecessary to dwell long upon this. In my *Lectures*, I have stated that the mammoth, the fossil rhinoceros, the hippopotamus, the fossil horse, the large beaver, characterise these beds; and that, besides them, several species of deer, oxen, goats, and sheep, are not rare in the diluvial formations; while the cave animals, such as bear, hyæna, tiger, and leopard, belonging to extinct animals, are rarely found in the diluvium, but mostly in caves. Doubts might certainly arise as regards the contemporaneity of these deposits, were it not that in the diluvium large bones of carnivora have been found, whilst in the caves the bones of pachydermata and ruminants were met with, which had been evidently imported there by beasts of prey, as the bones still bear evidence of the traces of their formidable teeth.*

* In a little work by M. Troyon (*Recherches sur l'âge de pierre quaternaire*, etc.) which has just reached me, I find a note, according to which Lartet still divides the first period into four different epochs—that of the cave-bear, of

I must at the same time repeat, that many of the extinct species which we find in Central Europe, have gradually retired to the north, where probably they existed longer than in Central Europe; whilst other animals, like the reindeer, the elk, the aurochs, the musk-ox, the gulo, the myoxus, the marmot, the ibex, and the chamois, have partly retired to the north, and partly to the mountains, where they still live; others again, like the stag, the wolf, several species of oxen and swine, have remained, and live among us either in a wild or domesticated condition. Whilst these facts prove that the epochs of the cave-bear and the mammoth were richer in mammals than the present epoch, we find, on the other hand, that the gradual extinction and retirement of the various species within an epoch of long duration, afford us the means of separating individual sections of time. The finding of remains of extinct animals in Central Europe, will thus enable us to separate the earliest epoch, that of the mammoth and cave-bear.

On searching for anthropological character in the deposits of the diluvium, it is reduced to the celebrated jaw of Moulin-Quignon, and to the cranium latterly found there, the description of which we have yet to expect. The other scanty remains of bones and teeth, which are found here and there, do not possess any importance as regards the determination of race.

The industrial character is confined to the various flint implements. Despite many objections, they have proved themselves works of art. They show everywhere the same character, presenting no traces of polish or grinding, rudely struck off from flints, and have been further worked according to the form given them by accident or a skilful direction of the blow. But heaven forbid that we should, from this the mammoth, of the reindeer, and of the aurochs; a division which Lartet first proposed in his description of the grotto of Aurignac. I must confess not to understand the grounds upon which this division rests. Cave-bear and mammoth have always been found associated. Schmerling enumerates the mammoth and the rhinoceros among the remains of the Belgian bone caves. There is no evidence that either of these animals appeared successively, or that one became extinct before the other. The finding of whole mammoths and rhinoceros in the icy Siberian diluvium, cannot be adduced as proof that they became extinct later. We should probably in our region have found, instead of skeletons, the entire bodies of elephants, if here the ice had increased instead of decreasing. This also applies to the distinction of the two other epochs, those of the reindeer and the aurochs. Both occur with the cave-bear and the mammoth (Schmerling found reindeer antlers in the Belgian caves). Both retired to the north, and have, like the human species, outlived their former contemporaries. The aurochs seems in France to have lived even later than the reindeer; but we know of no facts affording a satisfactory proof that the aurochs, after the retirement of the reindeer, characterises a special prehistoric epoch.

circumstance, conclude that all such rudely worked flint implements, or their cast away nuclei, belong on this sole ground to the first epoch. Already, in the earliest period of human society, there must have obtained a certain division of labour; and many spots where many implements were found are justly looked upon as manufactories where the stonemen, as we may call them, first rudely worked suitable flints, in order subsequently, perhaps, to polish and grind them with ears for handles, etc. Where other characters for determining the age are wanting, we are perfectly justified in suspending our judgment, as regards the antiquity both of the rude implements and of the nuclei from which they were struck off, until other proofs are forthcoming. As an instance, I may mention the large flint nuclei, the so-called butterstones of Grand Pressigny, which have given rise to so lively a discussion between some members of the Academy and M. de Mortillet. These large blocks, of peculiar grain and quality, from which long flint knives had evidently been struck off, of which some have recently been found under the vegetable earth, were by some members looked upon as the remnants of a large manufactory of gun-flints, which had existed on that spot within a comparatively recent time. This assertion was successfully refuted by competent judges, such as Penguilly l'Haridon, director of the Paris artillery museum, and Mr. John Evans, both on historical and manufacturing grounds. I have myself, after inspecting the fragments collected by M. de Mortillet, become convinced that the fabrication of gun-flints by means of steel instruments, which, from the invention of the flint-lock down to the introduction of percussion-caps, obtained in France and England, never left remnants like these butterstones. The latter are frequently more than a foot in length, and consist of a peculiar coarse-grained flint with a waxy lustre, and was from its toughness unfit for gun-flints. It has, moreover, been shewn from the archives that a gun-flint manufactory had never existed near Pressigny. Such butterstones have, moreover, frequently been found in walls erected long before the use of gun-flints. But, whilst all this militates against the modern origin of these flint knives, of which many are found in the vicinity, it must, on the other hand, be admitted that the position in which they are found affords no satisfactory proof that these remnants of a flint manufactory belong to the mammoth epoch. The circumstance that some polished fragments, as stated by Evans, were found in the vicinity, rather proves that they belong to a later period.

I merely mention this instance, to show how cautious we should be positively to determine the age from few facts, and a single character not universally valid. A flint knife, intended to be polished, must necessarily be first struck off; and the find of such flakes, as

well as their nuclei, does not prove that they were not subsequently polished. I shall, therefore, say here no more of the many flint implements found in different spots, partly on the surface, or in the vegetable earth, or in sand and gravel beds. Further observation may, perhaps, by the addition of other more positive characters, assign to them a definite place in history; but, until such characters are found, we should take all these finds *ad referendum*, and rather confess our ignorance, than enter into discussion on subjects which as yet have acquired no scientific certainty.

[To be continued.]

THE FOSSIL HUMAN JAW FROM SUFFOLK.

By ROBERT H. COLLYER, M.D.

At the instigation of Vice-Admiral Sir Edward Belcher, C.B., I was induced to exhibit to the Ethnological Society of London in April 1863, a fossil or coprolite human jaw, which was found by the workers employed in excavating coprolites near Ipswich, Suffolk.

The jaw was purchased from the finder by Mr. John Taylor, druggist, of Ipswich, for the sum of 2s. 6d., who called my attention to it at the time, 1855. A small portion of the bone was filed off, which, on the application of heat, emitted a slight odour peculiar to burnt gelatine, showing conclusively that the whole of the animal matters of the bone had not been fossilised. As this, to my mind, is no criterion that the bone did not belong to a period coeval with extinct mammals, I was very anxious to become the possessor of this "coprolite jaw." The specific gravity is much greater than that of a recent bone of the like size, it being infiltrated throughout its entirety with oxide of iron, and the surface presents peculiar metallic lustre. The condyloid processes are one-and-half inches distant from the alæ, and from the condyles to the posterior angular protuberance it recedes full 45°, and the same receding angle is shown from the mentum prominens to the alveolar processes of the place formerly occupied by the incisor teeth; the bone probably was that of a female of small stature, and as the alveolar portion of the jaw, where the incisor teeth were inserted, is closed, and the molar teeth ground down, I am of opinion that "the human" tore the food prior to mastication by the molars. The cranium of this jaw must have been very small, with a contracted low frontal region. I have now every reason to believe that this "coprolite jaw" is the oldest relic of the human animal in existence, as its

condition corresponds in every respect with the coprolites in whose contact it was found. Mr. Taylor presented the "coprolite jaw" to Sir Thomas Beaver, Bart., of Norfolk, in whose possession it remained until March 1857, when he kindly forwarded it to me. I took it forthwith to my friend Professor Quekett, who was then curator of the College of Surgeons, who after having carefully examined it, said, "this is, indeed, a curious bone; it belonged to a very low race; I would wish Mr. Owen, of the British Museum, to see it." I accordingly took it to Professor Owen, who kept it for two years without coming to any *expressed* opinion. In 1859 I took it to Mr. Prestwich.

In April 1863, in consequence of Sir Charles Lyell's work "On the Antiquity of Man," I wrote to Professor Huxley a short history of the "coprolite jaw." In the meantime Sir E. Belcher called on me, stating that Mr. Crawford was going to read a paper on "the primitive races of mankind" at the Ethnological Society, and urged me to accompany him, and bring the "coprolite jaw."

After the paper, a discussion took place, in which Sir C. Lyell, Sir Roderick Murchison, and Professor Busk took part. At this time the whole scientific world was very much interested in the discovery of the "Abbeville jaw" by M. Boucher de Perthes in the drift of the Somme Valley, in contact with flint haches or langues de chats.

Professor Busk, whom I had not the pleasure of knowing at the time, pronounced the "coprolite jaw" in the most summary manner to be "the jaw of some old woman, perhaps from some Roman burial ground," and also said that the "Abbeville jaw" had been proved to be a deception practised by the workmen on M. Boucher de Perthes. Everyone present at this juncture looked on me as an impostor or a fool for having had the rank temerity to have dared to foster on such authorities and experts "my jaw," without prestige or unheralded by fame. I, however, said mentally, this "old woman's jaw" shall "be heard;" but to vindicate the facts at that moment was out of the question. The tide had turned against me. I enjoyed a private laugh at the perversity of even the highest apostles of the science of geology, hitherto proscribed by the bigotted and intolerant. I was conscious of the genuineness of the "coprolite jaw."

Next morning Professor Huxley called at my house and pronounced the "coprolite jaw" to be a "most extraordinary specimen." I gave it to him, so that a careful examination should be made, and received the following:—

"Royal School of Mines, Jermyn Street, May 2, 1863.

"MY DEAR SIR,—My friend Mr. Busk has taken your remarkable specimen in hand, and I will ask him to inform you as to the conclusions to which he may arrive. No doubt, as I stated when you were

so good as to show me the jaw, it has some peculiar characters, but they do not appear to me in themselves adequate to lead me to ascribe the bone to an extinct or aberrant race of mankind, and the condition of the bone is not such as I should expect a crag fossil to be.

"I am, dear Sir, faithfully yours,

"T. H. HUXLEY.

"Dr. Collyer."

The "Abbeville jaw" controversy enlisted at this moment all the most eminent anthropologists of Europe. The principal disputants were, in England, Messrs. Hugh Falconer, Busk, Prestwich, and Evans; in France, MM. Quatrefages, Delesse, Desnoyers, Lartet, Gaudry, Lyman, Pictet, and Boucher de Perthes. Messrs. Prestwich and Evans undertook to show that the flint implements were of modern fabrication. Messrs. Falconer and Busk, that the "Abbeville jaw" contained so large a proportion of animal matter, as to pronounce the bone to be comparatively modern when compared with *the drift* with which it was alleged to have been found.

The "coprolite jaw" was considered, both by Drs. Falconer and Busk, to be of sufficient importance to be taken by them to Paris, so as to show the French savans that a human jaw favourably situated could be infiltrated with a metallic substance; and in the reprint of a pamphlet from the *Natural History Review*, July 1863:—

"An account of the proceedings of the late Conference held in France to inquire into the circumstances attendant on the asserted discovery of a human jaw in the gravel at Moulin Quignon near Abbeville, with notes by H. Falconer, M.D.; George Busk, F.R.S.; W. B. Carpenter, M.D., Vice-President of the Royal Society."

At note 37, in referring to the "coprolite jaw," I find these words:—

"The specimen is a very remarkable lower jaw of a human subject now belonging to Dr. Robert H. Collyer. It is reputed to have been found in the gravel heap of a coprolite pit near Ipswich; although retaining a portion of its gelatine, it is infiltrated through and through with iron. The Haversian cords are filled with red oxide, and a section of the fang shows that the ivory is partly infiltrated with the same metal. This specimen proves that the human jaw, if favourably placed, is equally susceptible of impregnation with metallic matter as the bones of any other mammal.

"(Signed)

"H. FALCONER,

"G. BUSK."

The term fossil has been used to designate a total conversion of a substance into mineral matter. Now, it is exactly in the correct use of this word that the whole question rests. I have in my possession the bone of a deer, which was found in the diluvium on the bare rock, twenty-three feet below the surface, with the bones of the mastodon,

but the presence of gelatine is at once discovered on submitting a portion of the bone to the action of fire; it is, therefore, not an infallible test as to the presumed age of a bone that it contains or not a portion of its gelatine.

It now appears that the preservation of the gelatine itself, or its destruction, depends in a great measure in accordance with the earthy or metallic matter with which the bone happens to be in contact. I have found portions of the same bone perfectly fossilised, whilst other parts indicated the presence of gelatine. It is now admitted, as the result of experiment, that bones of recent animals, introduced into old deposits, may assume in a comparative short time the conditions of the bone of extinct animals; while on the other hand, the undoubted fossil bones of extinct animals, may, under certain conditions, present a large amount of animal matter. In the Museum of Natural History, Philadelphia, the bones of the megalonyx and the extinct peccary remain in a condition nearly unchanged. Very little of the gelatine has been lost, nor a particle of the mineral matter added.

Many of the human bones found by Dr. Lund in the ossiferous caves of Brazil were petrified in the same manner, and offered the same metallic break, and were penetrated with the same ferruginous matter as the bones of extinct animals with which they were found associated. The same as the "coprolite jaw" was impregnated, like the coprolites, with which it was found. Sir C. Lyell says, in his *Elements of Geology*, 1852:—

"The large amount of animal matter in the tusks, teeth, and bones of some of these fossil mammalia is truly astonishing; it amounts, in some cases, as Dr. Jackson has ascertained by analysis, to be 27 per cent., so that when all the earthy ingredients are removed by acids the form of the bone remains perfect, and the mass of animal matter is almost as firm as a recent bone subjected to similar treatment."

Who would infer, because of the existence of the animal matter, that the bones had been recently buried or were comparatively modern? "These fossil mammalia" inhabited the earth's surface coeval with a human being whose type was suited to the then state of things. Prior to the last great convulsion or catastrophe which entirely removed all life, the gelatine in the bones of the extinct mastodon, megatherium, megalonyx, glyptodon, or mylodon, is not adduced as an argument that these bones are of recent date, therefore, why should it be made use of when applied to the human bone?

Is the structure of one bone in any wise different from the other, whether of the mastodon or of a man, that, under like conditions, it would not present the like infiltration of metallic matter entirely or in part? It occurs to me that, when the difference is made, the disputant is sacrificing science to preconceived notions and prejudices.

M. Quatrefages says :—

"The presence of gelatine, if I am not mistaken, has been demonstrated in various bones, properly so-called belonging to fossils, much more ancient than the diluvium can be by any possibility."

It is only within a few years that the bones of a fossil monkey were discovered.

Sir C. Lyell says :—

"At Kyson, a few miles east of Woodbridge, a bed of eocene clay twelve feet thick underlies the red crag. Beneath it is a deposit of yellow and white sand of considerable interest in consequence of many peculiar fossils contained in it. Its geological position is probably the lowest part of the London clay proper. In this sand has been found the *first example* of a fossil quadrumanous animal discovered in Great Britain, namely the teeth and part of a jaw, shown by Mr. Owen to belong to a monkey of the genus *Macacus*. It was not until 1836 that the existence of any fossil quadrumana had been brought to light."*

Now comes the mental struggle—the monkey having been found as existing at a prior condition to that which now exists of the earth—why should not man?

The question is severe, but must be put. What are the conditions which admit of the monkey and mammals enjoying life that would not also equally admit of man being an inhabitant of the earth at a corresponding period?

Perhaps man, in his highest order of development, could not then have flourished; it is easy to understand a state of the earth congenial to purely animal existence, though not fitted to mental functions as we now manifest them.

M. Pictet says, with regard to fossil man :—

"The question may be put—At what period has man appeared upon the earth? What was the geological state of the surface of the earth? What animals lived at that period?"

A precise answer to these questions would be all that could be desired. We cannot arrive at that point, though we are much nearer than we appeared some years ago. When the earth was sufficiently cooled vegetation was produced on the emerged continents, after which the first zoological creation took place, and animals, differing from most of those which now exist, spread over the face of the earth.

Elevations and depressions modified the surface of the earth, and either by convulsions similar to those which had occasioned them, or by organic laws governing the world and not yet understood, the beings then living disappeared to be replaced by others. These phenomena,

* Prof. Owen has since admitted this "monkey" to be actually a small pachyderm, allied to the pig (*Hyracotherium*).—EDITOR.

or something like them, have occurred repeatedly, and thus numerous populations have succeeded each other. Each of these has left its remains or vestiges in strata formed at different periods. These remains are "the medals of creation," which, with data furnished by geology, enable us to read the past history of the globe—the existence of at least thirty different epochs, more or less distinct, and in each we recognise a different *Flora* or *Fauna*. The most vivid imagination cannot conceive the vast ages or eras of time requisite for the succession of these phenomena in which all these populations were developed in particular zones.

As regards the history of man, we need not occupy ourselves with these remote periods, we may take as a starting point the formation of the deposits of the tertiary period. These deposits, known as the Pliocene, are those in which for the first time, the mammal population contain the remains of such species as are *similar* to those now existing.

At the termination of the tertiary period commenced the diluvium. Now it was that we find the remains of animals similar to those which now exist, and some which are extinct. Did man live contemporaneous with the cave bear, the mammoth, and others like mammals?

The laws of the universe have never changed. The remotest star or sun, which is a million times the size of our planet, is governed by the identical laws which regulate our condition. Uniformity and consistence in the operations of nature show that every form of matter under like circumstances will re-exist, whether it be a crystal, a plant, or a mammoth.

The many alternate contractions, upheavings, and vast dismemberments of the entire earth's surface, having ages of comparative rest intervening in each of these epochs, the various conditions of vegetable and animal existence have been developed. Should the world tomorrow undergo another entire disrapture so as again to destroy all life, the same inherent power, incidental to its particular condition, would again people the globe with the various races, each compatible to the zones especially fitted for their existence.

How many times the earth has been previously to the present inhabited and repeopled, it is impossible to even form a conjecture. It, however, may be admitted as a fact that it only requires a specific condition whether electrical, caloric, or chemical, we are sure to have a definite effect. The great convulsions of the world are accompanied by conditions perfectly adequate to produce every form of life with which we are cognisant. No one who is not intellectually blind, but must have observed the remarkable adaptation to locality which every form of life possesses, from the minutest animalcule, 187 millions of whom only weigh one grain, to the development of the highest form of life, is exhibited in man of the temperate zones.

The discovery of human fossils has now become so frequent that no one who has taken the trouble to carefully investigate the facts will attempt to dispute that man did really exist at an ante-historic period, and coeval with extinct mammals.

My dear friend Dr. Morton of Philadelphia, said, in 1850 :—

"There is no good reason for doubting the existence of man in the fossil state. We have already several well authenticated cases, and we are hourly looking for more, even from the upper stratified rocks. Why may we not discover them in the tertiary deposits, and in the cretaceous beds, or even in the oolites. Contrary to all preconceived opinions, the latter strata have already afforded the remains of several marsupial animals, which have surprised geologists almost as much as if they discovered the bones of man himself."

A fossil human skeleton is in the museum at Quebec ; it was dug out of the solid schist rock in making the foundations for the Citadel. This specimen I have examined, and it corresponds in structure to the fossil bones of extinct mammalia.

To revert to the "coprolite jaw," it was found under circumstances which do not admit of a doubt, but no artificial means could have been employed so as to cause the permeation of the oxide of iron ; besides the other peculiarities of the jaw itself, all go to prove most conclusively to my mind that it belonged to a prehistoric human being, whose head was swallowed by a huge carnivore, and the jaw was excremented with other matters, the ducts of digestion.

The coprolites are unquestionably the excrementary deposition of animals who lived on sharks and whales, as we discover immense quantities of the teeth of the former and the bones of the ear of the latter, besides undigested bones of fish are discovered in many of the coprolites.

The "old woman's jaw" has had her revenge.

With true philosophic spirit, and consistent with the high character of a gentleman in the strictest sense, Professor Busk sent me the following :—

"15, Harley Street, August 19th, 1863.

"MY DEAR SIR,—I have received the jaw from Dr. Falconer, and now forward it to you, with many thanks for the liberal use you have allowed us to make of it. I hope you will not consider that it has been much injured by the rough treatment we have submitted it to. In all essential respects it is much as it was, and it has been a great satisfaction to be able to compare its interior as well as exterior with other bones. Having thus had an opportunity of fully examining the bone, I have considerably modified the opinion I hastily expressed at the Ethnological Society. That is to say, it is *very different* from an ordinary churchyard bone, though, of course, without any relation as regards age with the fossil bones of the coprolite beds ; it is of *very*

great antiquity, and it is peculiarly remarkable for the great amount of iron it contains, though still retaining about 8 per cent. of animal matter. On the whole, therefore, though not of the portentous antiquity it would have claimed, had it been cotemporary of *Elephas meridionalis*, the "coprolite jaw" fairly claims a considerable age, and I, for one, am much obliged to you for having brought it under notice, and for the liberal way in which you have allowed it to be examined.

"Believe me, very truly,

"GEORGE BUSK.

"R. H. Collyer, Esq., M.D."

Nothing more could be expected from Professor Busk; when he says the coprolite jaw is of very great antiquity, he admits the whole question.

I have now the pleasure to add a letter from Mr. John Taylor, which completes the history of this really extraordinary specimen:—

"97, Fore Street, Ipswich, November 13th, 1866.

"DEAR DOCTOR,—I was very agreeably surprised to hear from you this morning. If I had known you were residing in Boulogne-sur-Mer, and had possession of 'the jaw,' I would have called upon you on my way to the Pyrenees last year, in order to have had another good look at the bone, which certainly must be of the same age as the coprolite in which it was found.

"The history of the matter, so far as I know, is very short.

"From what I could learn at the time, from the agricultural labourer of whom I bought it, it came from the coprolite pit on the farm of Mr. Laws at Foxhall, about four miles from Ipswich, and was thrown out at Mr. Packard's manure factory with the coprolite from a cart or tumbril, and from thence was brought to me to secure a glass of beer. I had possession of it for near three months, when Sir Thos. Beaver (whose son was then living with me) called on me, and seeing that he exhibited great interest in the inquiry as to the antiquity of the jaw, I had the pleasure of presenting him with it.

"There is no doubt the bone was obtained at some depth,* as I know the pit had been open for a considerable time when it was found.

"Having given you all the information I possess, I shall be anxious to hear the result of the investigation.

"The account of the 'Abbeville jaw' appeared in the *Times*, and I suppose yours of this jaw will also.

"Yours very truly,

"J. TAYLOR.

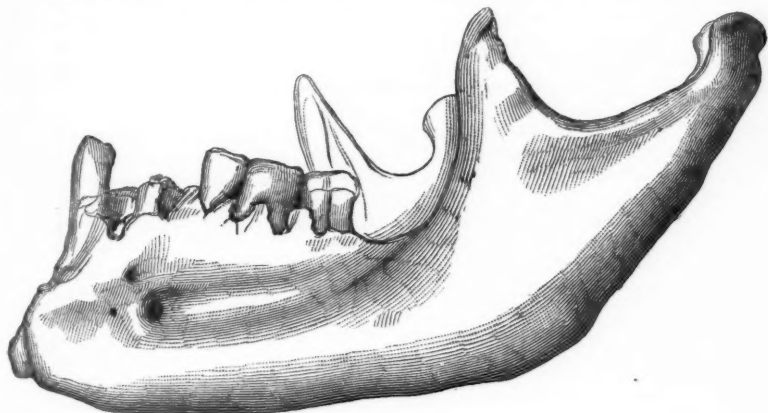
"Dr. Collyer."

It will be observed that Foxhall, where the "coprolite jaw" was found, is a few miles from Kyson, where Sir C. Lyell says the first example of a fossil quadrumanous animal was discovered in Great Britain,

* I visited the coprolite pit in 1855, immediately after it was found, and ascertained that it had been worked for over a year. The place from which "the jaw" in all probability came, was sixteen feet below the surface.

namely, the teeth and part of the jaw of a monkey, of the genus *Macacus*. The eocene strata, in the vicinity of Woodbridge and Ipswich, are exceedingly rich in animal remains of a prehistoric condition of the world. I see no reason whatever for doubting the antiquity of the "coprolite jaw."

These facts should at least make the sceptical pause, on the probability that man may be no exception to the rest of creation.



THE ANTHROPOLOGICAL CONGRESS OF 1867.

Is the year 1865, a Congress for Archaic Anthropology was held at La Spezzia, and in 1866 at Neufchâtel. This year it is to be held at Paris, on the 17th of August. The following are the rules of the Congress:—

"The Congress cannot be held twice successively in the same country.

"All persons desirous of becoming members, who have paid their annual subscription (quota) are entitled to receive the publications of the Congress.

"At the end of each session, the Congress decides upon the locality where the next meeting is to take place; it also elects from the *savants* resident in the country fixed upon, the President of the ensuing session. It also elects several other *savants*, who are charged to

constitute, under the direction of the President, an organising (managing) Committee.

"The organising (managing) Committee are at liberty to add other *savants* of their own country to their number; they, moreover, have to request the co-operation of such foreign *savants* as may appear to them likely to obtain the greatest number of adhesions in favour of the Congress. These take the title of corresponding members of the Committee.

"The Committee fixes the time of the session, the number of sittings, and the amount of subscriptions (quota); it sends out letters of convocation, collects and concentrates the adhesions, and delivers cards of membership. It has, moreover, the charge of all material arrangements concerning the installation of the Congress and the holding of its sittings.

"It prepares, publishes, and distributes, several months in advance, the programme of the sittings; it may fix upon a certain number of questions; but it is bound to reserve a portion of the sittings for the discussion of questions not comprised in the programme, and which, under the approval of the Council, may be proposed by any member of the Congress.

"The bureau of the Committee fulfils, in the first sitting of the session, only the functions of a provisional bureau. The members of the definitive bureau are in this first sitting to be appointed by the majority, excepting the President, who has been elected in the preceding year, and the Treasurer, already appointed by the organising (managing) Committee.

"The bureau is composed, 1, of a President; 2, of six Vice-Presidents, of whom two at least must be residents; 3, of a General Secretary; 4, of four Secretaries; 5, of a Treasurer.

"The Council is composed, 1, of the members of the definitive bureau; 2, of six elected by ballot from the list. Members of the Council by right are, 1, the four foundation members of the Congress of La Spezzia; 2, all ex-Presidents, who have conserved their titles of honorary Presidents. Those members of the organising (managing) Committee who belong to neither of the preceding categories, assist at the meetings of the Council, and have a consulting vote.

"All demands concerning communications arriving during the session, and all claims, are submitted to the Council, whose decision is final. The Council is, conformably to article iv, charged to put to the vote of the Congress, 1, the designation of the locality where the next session is to be held; 2, the nomination of the President, and the members of the organising (managing) Committee of the next Congress.

"In the second sitting, the Congress nominates, on the proposition of the Council, a Publishing Committee, of which the General Secretary is President by right, and of which the Treasurer is also a member. This Committee, entirely composed of national members, has also the charge of settling the accounts.

"The surplus, if any, is to be placed to the credit of the next following session.

"The objects offered to the Congress during the session and the whole of the correspondence, belong to the country where the session is held. Their destination is determined by the Council.

"The Committee of each session establish special regulations concerning all matters not specified in the preceding general regulations.

"Every proposition tending to modify the general regulations, must be signed by, at least, ten members; it must be placed upon the table, during the session, and submitted to the examination of the Council. The latter, after due deliberation, prepares a report, which is, with the proposition, inserted in the publications of the Congress, and which is put to the vote, without any discussion, simply by yes or no, in the first sitting of the following session.

"*Programme.*—All persons taking an interest in the progress of science, may become members by paying a subscription fixed for this year at ten francs.

"The receipt of the Treasurer entitles the holder to a card of membership, and to all the publications of the Congress.

"The correspondents of the Committee and all those who earnestly desire the development of the studies pursued by the Congress are requested to procure as many adherents as possible.

"The adherents are requested to send at their earliest convenience the amount of their subscription to the Treasurer of the Congress, M. E. Collomb, Rue de Madame, 26, carefully indicating their names and surnames, profession, and residence.

"These details are indispensable for making up the list of members and preparing the cards.

"The cards and the detailed programme of the Congress will be distributed from the 10th to the 16th of August between ten and five o'clock, at the residence of the Secretary, M. G. De Mortillet, Rue de Vaugirard, 35, corner of the Rue de Madame, Paris.

"The Congress will sit from the 17th to the 30th of August.

"According to Article VII of the General Regulations, the organising (managing) committee have fixed upon the following six questions which will form the order of the day on the subjoined dates:—

"*Sunday, 18th.*—I. Under what geological conditions, and amidst which *Fauna* or *Flora* have in the different parts of the globe the most ancient traces of the existence of man been met with.

"What are the changes which might since that period have taken place in the distribution of lands and seas?

"*Tuesday, 20th.*—II. Was habitation in caves universal? Is it merely the fact of one and the same race, and does it relate to one and the same period?

"If the contrary be the case, how can it be subdivided, and which are the essential characters of each subdivision?

"*Thursday, 22nd.*—III. Are the megalithic monuments due to one population who have successively occupied different countries?

"If this be the case, what has been the march of this population? What their successive progresses in arts and industry?

"Finally, what are the relations which may have existed between this population and the lake habitations of which the industry is analogous?

"*Saturday, 24th.*—iv. The appearance of bronze in the west, is it the product of native industry, the result of a violent conquest, or of new commercial relations?

"*Monday, 26th.*—v. Which are in the different countries of Europe, the chief characters of the first iron period?

"Is this epoch anterior to historic times?

"*Wednesday, 28th.*—vi. What notions have been acquired concerning the anatomical characters of man in prehistoric times from the most remote epochs to the appearance of iron?

"Can, especially in Western Europe, the succession of races be proved, and can these races be characterised?

"The remaining sittings are left open for the discussion of questions proposed by various members.

"Each of these questions initiated by individual members, will as much as possible be allied to the question put by the Committee with which it is most connected.

"The members desirous of sending communications are requested to inform the Secretary to that effect before the 10th of August, so that the general programme and the order of the day in the sittings may be distributed simultaneously with the cards.

"All members possessing objects likely to throw light on any question are earnestly requested to send, if not the original, at least, casts or drawings. This request applies specially to human remains.

"Fellows of the Anthropological Society of London wishing to take part in the Congress will receive their cards of admission by application to the Secretary of the Society on or before the 1st of August.

"At the same time there will be discussed in the international Medical Congress two questions of great interest to anthropologists, and specially belonging to their science. The first is on the influence of climates, races, and various conditions of life on menstruation in different countries; and the second is on the acclimatisation of man. Dr. Paul Broca takes a very prominent part in this Congress, and Dr. Jacond, 4, Rue Drouot, is the Secrétaire Général, and Dr. Vidal, of 112, Rue Neuve des Malharens, the Treasurer. A prospectus has been issued detailing the arrangements, and the following is a translation of the remarks made on the two questions we have named.

"The age of the first menstruation and the period of menopause vary according to climates, races, and modes of life. The object of the question proposed is mainly to determine the part of these three orders of influences by means of observations in different conditions, but reduced to comparable terms.

"The documents hitherto existing in science are, perhaps, neither sufficiently numerous nor sufficiently varied to admit of a solution of this complicated for the present; but the solution might possibly be derived from the comparison of the memoirs, which may be presented by physicians of different countries.

"Without in any degree desiring to limit the scope of their researches, the Committee nevertheless deem it their duty to indicate the chief elements of the problem.

"In order to appreciate the mode of life, it is necessary to compare

several series of females pertaining to the same race and inhabiting the same country, but living under different conditions. These series may easily be reduced to three: the women of the wealthy class, the work and poor women of the cities, and peasant women. The facts hitherto known tend to establish that the average age of the first menstruation presents in these three groups (which might, if necessary, be multiplied) very notable differences.

"The condition of comparing between themselves, women of the same race, presents itself rarely, in all its strictness, in the countries inhabited by the races of Europe. Most of the European populations of the Old and of the New World are issued from an intermixture of several races, more or less fused, a mixture which manifests itself by the variation in certain external characters, such as the colour of the eyes and hair. It would therefore be interesting to note these anthropological characters, in the observations, for the purpose of establishing in each group secondary groups composed of elements as comparable as possible.

"The influence of climates on the phenomena of menstruation may be inferred from the study of females of the same race living under different climates and in nearly equivalent social conditions.

"Finally, observers residing in countries inhabited by distinct races might, by establishing groups based both on the preceding indicated conditions and on the anthropological conditions, without neglecting the important study of women of mixed blood, be enabled to solve the problem of race on menstruation.

"It must be well understood that the study of anomalies of menstruation considered in their relations with the above-mentioned influenced enters directly into the subject proposed.*

Question VI. The Acclimation of the Races of Europe in Hot Countries. The facts relating to the acclimatisation of the individual are not comprised in the question proposed. Europeans cannot esta-

* The labours undertaken with the view of answering this question, can only repose on individual observation, and can only acquire importance by the comparison which will be established between the researches of different authors. It is therefore desirable that these researches, which will be carried on under very different conditions, should be executed on an uniform plan. We therefore request the respective authors to annex to their memoirs a table of individual observations, which might easily be disposed in the following frame.

Subjects observed.	Age.	Social condition, profession.	Age at the first menstruation.	Menstruation, regular, or irregular.	Intervals between menstruation.	Duration of the flux.	Married or single.	Number of children and miscarriages.	Age at the menopause.
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Other particulars might be added, relating to stature, colour of the eyes, hair, the constitution, etc. It is to be understood, that each *bulletin* should be accompanied with particulars concerning the locality where the observations were made (longitude, latitude, altitude, temperature, etc.).

blish themselves in hot countries without exposing themselves to certain diseases which increase more or less their chances of mortality. Nevertheless, however great may be the dangers which they incur, a certain number of individuals may escape, either owing to a particular flexibility of organisation, or by a mode of life capable of neutralising the noxious influence of the climate.

"It should be avoided to confound these individual facts with such as bear upon the acclimatisation of a race. A certain number, and even a large number of acclimated individuals, is insufficient to prove the acclimatisation of the race they belong to; for it may well happen that their descendants do not so well escape as they did the action of the climate, and that their progeny may become extinct at the end of a few generations, of which there exist too many examples.

"A race is only acclimated in a country when it can maintain itself indefinitely by *itself*, without intermixture with the indigenous races, and without being more or less frequently reinforced by the mother country. The process which consists in demonstrating the acclimatisation of a race in a colony by basing it purely and simply on the increase of the population is altogether deceptive. The arrival of fresh immigrants may entirely hide the destructive effects of the climate, and show a numerical increase, where, if the colony were left to itself, it would be threatened with an approaching extinction. The comparison of births with the deaths, which is the true method to proceed by, does not entirely escape this cause of error, since most of the immigrants, having already passed the age of infancy which is the most dangerous period of life, do not generally figure upon the registers of the population until they are in a condition to procreate. Hence results the necessity of separating the group of immigrants from that of the colonists born in the country.

"In order that a race should be completely acclimated, it is not sufficient that it maintains itself by its own blood, it must also be able to subsist by its own labour, by cultivating the soil, and not by having it cultivated by individuals of another race. Acclimatisation subordinate to the subjection of an indigenous or exotic race, reduced to domestication or slavery, can only be temporary, like the political conditions upon which it depends.

"The chief aim of the question presented to the congress is to obtain documents relating to the complete acclimatisation of European races in hot countries. It nevertheless would not be without interest to study the conditions by the aid of which races although not completely acclimated, may at least, by the labours of others, maintain themselves in hot countries, where they could not, without perishing, undertake to cultivate the soil.

"Without undervaluing the utility of compendious works which may be presented to the congress on the question proposed, the committee deems it necessary to ask for special memoirs on the acclimatisation of such or such a people of Europe in any of the hot regions of the globe. The committee wishes that each of these memoirs should be accompanied with particulars as complete as possible on the medical geography, meteorology and the climatology of these regions.

In our next we hope to be able to give a report of the objects of anthropological interest in the Paris exhibition; but in the meantime, we especially invite the attention of British anthropologists to both the congresses we have mentioned, and trust that British science will be well represented at them.

PROCEEDINGS OF THE PARIS ANTHROPOLOGICAL SOCIETY.*

DR. PRUNER-BEY, on taking the chair as President, vice Dr. Gratiolet who retired by rotation, delivered an opening address.

After congratulating the Society on its steady progress, numbering now 264 numbers, and adverting to the decree by which the Society is recognised by the State as an institution of public utility, M. Pruner-Bey offered some interesting general remarks on the study of anthropology, and concluded in nearly the following words.

Every true science has for its object to trace the effects to their causes. Consequently in the same way as the theory of vital force has been demolished by substituting for it the correlation of forces and molecular actions, the attempt has been made to substitute the physiology of the brain and the nervous system for the physiology of former days. A great struggle on this subject is still going on in the fatherland of modern ideology. Its importance has been appreciated in our own discussions, and thanks to your own efforts, some light has been thrown on this subject. Let us, however, confess that the constitution and disposition of the anatomical elements of the brain in as far as they are accessible to our investigation, leave us but little hope to see the end of the struggle. Whilst, for a long time to come, we must confine ourselves to signalise and classify the manifestations of our mind, it is on the other hand only by comparative studies that we may be enabled to distinguish what is fundamental in human nature and what is the result of the culture of our faculties. I was obliged to touch on this delicate and thorny matter in order both to point out our mission in the sphere of speculation and to obviate the reproaches which might be made to anthropology, for not being as yet a science as regards the most interesting questions. We are in this respect entirely in the same position as the zoologist, who no more than the anthropologist can detect the primary springs which set the instinctive and intelligent acts of animals into action. We may even affirm that

* Continued from No. xvi, p. 128.

as regards phenomenology, man is already better known to us than the animal.

On the Relations between the Anthropoid Apes and Man, by M. Schaafhausen of Bonn, translated by M. Pruner-Bey. The scientific portion of M. du Chaillu's work has been received with distrust by the learned. There exists, nevertheless, no reason for doubting his descriptions of the mode of life of the gorilla. Some of the corrections of Mr. Reade of the remarks of Du Chaillu have no great bearing on the position which in my opinion this animal occupies in the scale of beings. But whatever may be the value of a profound knowledge of the mode of life of a gorilla, its anatomical structure shows us sufficiently the degree of his organisation, and the size of his brain, upon which depends his intelligence. In this respect the distance between the gorilla and man is immense, a difference which has not been properly appreciated by Mr. Huxley. There is no doubt that in the brain of the large anthropoid apes, no essential part of the human brain is absent; but as regards volume, the difference is very remarkable. The assertion of Mr. Huxley that men, even as regards the volume of the brain, differ among themselves more than apes, is equally erroneous; an opinion which is founded upon the arbitrary employment of measurements of crania both rare and doubtful. The brain of the Australian exceeds two or three times the volume of the brain of the gorilla, whilst the brain of a European exceeds that of the Australian only by one-fifth. Another allegation of Mr. Huxley to the effect that, as regards the volume of the brain, the inferior apes differ from the superior as much as the latter differ from man, is also without scientific value, inasmuch as this author has not taken into account the incomparable difference of size of the above-mentioned simia, whilst in this respect man and the gorilla are nearly equal. This distance between man and ape must not be ignored; in fact, one glance at the cranial cavity reveals it. I think, however, that it was less in times past, or perhaps did not exist at all. The differences of volume in organised beings of the present world are only gaps produced in the chain by time. Transitional forms will, no doubt, be found still reposing in the bosom of the earth which covers palaeontological creation. Without entering into pretended developments, I shall confine myself to a single point.

In the present state of things, the distance between man and the animal increases under our own eye. Not merely the human races standing lowest in the scale, and presenting in their organisation many resemblances to animal forms, are gradually becoming extinct, but the superior apes approaching nearest to man become more rare from century to century; and will, perhaps, in a few centuries have entirely

disappeared. What is there illogical in the idea that thousands of years back the distance between the lowest man and the highest ape was less than at present, and that it would still lessen the more we ascend the past?

There is another circumstance, not owing to chance but to a natural law, namely, that the superior apes could only maintain themselves amidst inferior men; for on contact with civilised peoples they would long since have disappeared. The more that man advances, the more likely is he to break the links which ally him to brutes. There is another striking fact which deserves mention, namely, that the large apes of Asia and Africa differ from each other by the same characters which distinguish the men of these two continents, that is to say, in colour and the form of the cranium. Like the brachycephalic Malay, the orang is brown, and his head is round; the gorilla, on the contrary, is black and dolichocephalic, like the African negro. This approach of two different human races to different apes from the same countries, seems to me the most fatal objection, in our present state of knowledge, which might be made to the theory of the unity of the human genus.

M. Gratiolet thinks that there exists no reason for establishing an anatomical similitude between man and gorilla. As regards the brain, the gorilla's is the lowest of the anthropoid apes, since the brain does not cover the cerebellum, by which he approaches the cynocephali. It is not in his size and strength that we must look for human characters, but in the conformation of the hands, and just in this he differs considerably from man. The thumb is very short in the gorilla, and its muscles much reduced. The long flexor is replaced by a tendinous tract, the origin of which is lost in the tendinous sheaths of the flexors of the other fingers. It follows that the thumb has no independent movement of opposition. In the orang, though the thumb is shortened, it still is capable of an independent flexion; but this depends on a peculiar disposition which he had lately verified with M. Alix. In point of fact, the proper flexor of the thumb is entirely absent in the orang; there is not even found that tendinous tract existing in the gorilla; but by a singular contrivance, the marginal fibres of the adductor muscle of the thumb terminate in a tendon which is placed in the axis of the first terminal axis.

The fact which establishes a great relation between man and apes is, that in them the optic nerves open directly in the cerebral hemispheres, whilst in the other vertebrates these nerves reach the brain only by the intermediation of the tubercula quadrigemina. This peculiarity may explain the existence of a certain conformity in the manner in which man and ape perceive their sensations. But it does

not follow that there is an identity in the nature of their intelligence; for, though the senses are subservient to the operations of the intellect, it cannot be said that they produce it. Man must be placed by the side of the ape, but only as an animal. Man is a being apart, just as all other vertebrata must be separated, as they cannot be considered as having originated from each other.

M. Gratiolet added, that as a pupil of Blainville, with whom originated the idea of a series in natural history, he felt bound to state how much the ideas of his master had become modified. Where Blainville formerly recognised transitions from group to group, he, in the latter period of his life, only saw maxima and minima of realisation for each group. He acknowledged an ideal series between types, but not a lineal series between all beings. It is thus impossible to invoke the opinions of Blainville for the support of theories tending to reduce to a single stock the numerous species composing the animal kingdom.

M. Broca is of opinion that M. Gratiolet had misunderstood the ideas of M. Schaafhausen, who, far from supporting the theory of Darwin, on the contrary, commenced by refuting the opinions of Mr. Huxley. M. Schaafhausen is apparently a partisan of *animal series*, but there is no necessary connexion between this and Darwin's theory. It may be admitted that all families, genera, species, from the monade up to man, are disposed in series, and form a continuous scale without necessarily admitting that the higher species are by a progressive evolution issued from the lower. Darwin's theory is a bold attempt to explain the existence of this series. It is the interpretation of a fact, and, whilst accepting the fact, we may reject the interpretation which was probably M. Schaafhausen's stand-point. The views communicated to the Society by M. Schaafhausen are both new and important. He shows that man is at present constantly engaged in the extermination of species which dispute his possession of the soil, and that he was so engaged in the past. We know that the superior human races tend to increase at the expense of the inferior races, some of which have disappeared within historical times, some will disappear, and others must have disappeared in the most remote periods. May, then, asks M. Schaafhausen, this destructive intervention of man not have contributed to enlarge the interval separating man from the group of anthropoid apes? He is of opinion that the interval was less originally than at present, and is less at present than it will be in times to come. The last opinion is very probable; the former is less so, for even if it were demonstrated, the question still would remain whether the intermediate types which disappeared sufficiently differed from such now limiting the two groups, sensibly to

diminish the distance. At all events, the ingenious idea of M. Schaafhausen deserved serious consideration.

M. de Quatrefages confirmed the remarks of M. Gratiolet touching the first ideas of Blainville on the animal series.

M. Pouchet considered that the idea of a linear series on the ensemble of the animal kingdom was now abandoned, and justly so, because there existed an impassable abyss between the vertebrates and invertebrates. But in confining ourselves to the vertebrata we may imagine a series resembling the branching off from an arborescent trunk, many of the branches representing as many extinct species being wanting. He therefore believed with Mr. Darwin that we are the remote cousins of the gorilla by the intermediation of a vertebrate, the type of which is now lost.

M. de Quatrefages would not admit the ideas of Darwin as regards species, but admits them with respect to races, which are daily formed under our own eyes.

M. Sansen cannot allow this observation to pass without contradiction. M. Quatrefages would be much embarrassed to name one single race perfectly new.

M. Quatrefages replied that the number of esculent vegetables had, independent of new importations, remarkably increased since the time of Louis XIII, and he cited the sheep of Manchamp, Malnegrée, Charmoise, as examples of new races produced within a few years by the crossing of distinct races. The difference between him and M. Sansen consisted only in the definition of the word race.

M. Sansen said it was quite true that he differed with M. Quatrefages as to the definition of race. In his opinion race is a group of individuals presenting an ensemble of similar forms and capable of being transmitted; homogeneity of typical character, and hereditary transmission, being the necessary attribute of race. And here he must remark that the term of race had not yet been defined in the Society, and an understanding on that subject became requisite. As regards the examples invoked by M. Quatrefages, they cannot be considered as new races, the sheep of Manchamp are Merinos differing only from the mother race by their silky wool. This is not a race character, the same wool being found in perfectly distinct races. As to the sheep of the Charmoise, he could show him two distinct types. They only resemble each other by their aptitude for fattening, which is not a race character. And as regards some esculent vegetables they had become so by culture. When they are left to nature their characters disappear, which does not prove that they constitute new races.

[*To be continued.*]

Anthropological News.

DR. ANTON FRITSCH, Director of the National Museum of Bohemia, we understand, intends to visit England this year, and will most likely contribute a paper to the Anthropological department of the British Association.

CAMBRIDGE PHILOSOPHICAL SOCIETY, Monday, February 18.—Professor Humphry read a paper "On some Points in the Anatomy of the Chimpanzee, and the Consideration of the Term 'Quadrumanous' as applied to that Animal." His remarks were the results of the recent dissection of two chimpanzees, and referred chiefly to the differences between their lower limbs and those of man. He pointed out that the outer condyle of the thighbone is round instead of being prolonged from before backwards, and flattened beneath, as in man. Hence there is comparatively little security afforded by the ligaments in the straight position, and little provision for the maintenance of the erect posture. The bones and joints of the ankles were shewn to be constructed so as to permit free movement rather than to bear weight. With regard to the term "hand", and the objections which have been urged to its application to the lower limb of the monkey, Professor Humphry remarked that, if we use the term to designate a certain modification of the fore limb—a certain deviation, that is, from the ordinary fore foot—we may with equal propriety apply it to a corresponding modification of the hind limb—a corresponding deviation, that is, from the ordinary hind foot. We must not expect it closely to resemble the human hand, but merely to present such a similarity to it as the special features of a hand—viz., the shortness, mobility, and opposableness of the thumb and the relative lengths of the other digits—would give it. Judging by this rule, it is as correct to speak of the "hind hand" of a monkey as of the "fore hand", though, forasmuch as both are employed in progression, it may, perhaps, be better to use some other term, such as "cheiropod", for the designation of the class, leaving the term "bimanous" to indicate the characteristic feature of man. The psychical qualities should not be omitted in considering the distinctive features of man; and the importance of the long, strong, firm great toe in this respect was pointed out. Some other peculiarities in the limbs, and in the prostate gland of the chimpanzee were described.

WHAT IS ETHNOLOGY?—Although so many different meanings have been given to this word, from "heathen" to "anthropologist", we have to chronicle yet another definition, given forth to the world by Professor Huxley. In some lectures at the London Mechanics' Institution, he is reported to have said that Ethnology "might be explained by the phrase Man Fancying, in the same way as the terms Pigeon and Dog Fancying were used to express a study of these particular varieties." Who will add another meaning to this ill-treated word? We trust that Professor Huxley's well-merited sarcasm with regard to the word Ethnology, will be the means of inducing those men of science who use that word, to do so no longer. This step we should hail as a sign of real progress in our scientific nomenclature.

MR. GOLDWIN SMITH has, we understand, been indulging himself at Manchester in an attack on "the anthropologists." We counsel that gentleman to take the trouble to make himself acquainted with the views of "the anthropologists," and then he would not lay himself so much open to be described as "a wild man" and "a rampant orator." Mr. Goldwin Smith

is like a great mass of the British public, who know apparently more about anthropology than he does of it. When Mr. Goldwin Smith likes to make a direct and manly attack on the opinions of some anthropologists, or even on some school of anthropologists, we shall then be ready to give both parties fair play and no favour.

DR. ROBERT H. COLLYER has been appointed Commissioner for the Anthropological Society of London at the Paris Exhibition. He will be happy to render any assistance to Fellows of the Society who may visit Paris during the Exhibition. His address in the Exhibition is "English Department, Class 43."

WE understand that a large collection of objects from Western Africa has been presented by Mr. R. B. N. Walker to the museum of the Anthropological Society. These are now on their way to England.

IT is the intention of Dr. R. S. Charnock to make a pedestrian Anthropological expedition across European Russia, and down the Volga to Astrakhan, next autumn.

M. ALEXIS FEDTCHENKO, of Moscow, Loc. Sec. A.S.L., is about to undertake an anthropological investigation of the Finns, and will be very much obliged to any English anthropologist who can facilitate his task by bibliographical indications of descriptions of the Finns in English works.

FELLOWS of the Anthropological Society who intend to take part in the anthropological section of the British Association at Dundee should communicate their names to the Director of the Society.

ABOUT a twelvemonth ago, whilst underpinning the walls of the Mansion House on the western side, numerous bones, both animal and human, were found, the latter chiefly skulls, leg and arm bones, lying about three feet below the surface of the level of the cellars. These remains, we understand, were buried again with great care.

FELLOWS of the Anthropological Society and others who wish to deliver lectures before the Society, under the provisions of Rule 47, have been invited to communicate their names to the Director.

ON April 5th, at eight p.m., Mr. C. Carter Blake will deliver a lecture on the "Bone Caves of Southern Belgium" at the Geologists Association, University College, Gower Street.

ANTHROPOLOGY AT THE BRITISH ASSOCIATION.—The forthcoming meeting of the British Association at Dundee is looked forward to with great interest, and by many with no little dismay. A long controversy has been going on between the Rev. George Gilfillan, of Dundee, and Mr. Gillespie, of Torbanehill, respecting "modern anthropology," and the latter has just published this correspondence in the form of a pamphlet, entitled "The Modern Anthropology as Developed into an Universal Ape Ancestry: can it be held by a Christian Divine of the Straitest School?" The annual meeting of the Association will not take place until September, and in our next we shall have an opportunity of reverting to this subject. In the meantime we would especially warn anthropologists that they must be prepared not to find Dundee a bed of roses. We would counsel more than ordinary discretion on the part of anthropologists as to the subjects to be brought before the people of Dundee. Anthropology in Scotland now seems to hold the same position that it did in France and Germany about the middle of the sixteenth century.

Amongst the important anthropological events which have taken place during the past year, the destruction by fire of the statues of various savage tribes in the Crystal Palace, deserves to be chronicled. Inaccurate as these representations no doubt were, they were the only materials generally accessible to the public in London, by which the popular mind

could render itself familiar with the aspect of many of the races of man. Their loss, in an educational sense, is therefore very great; and it is to be hoped that some casts similar in character to those preserved in the Paris Gallery of Anthropology may soon take their place. These casts should in all cases be coloured with the precise tints of the original skin; and the greatest possible care should be taken, not merely to surround them with all necessary accessories of costume and furniture, but to maintain the expression of the living subject as far as possible. Masks taken from the dead face do not always indicate the true physiognomy of the individual.

WORKED STONES FROM ZETLAND.—The discovery which Dr. Hunt made in the Zetland islands of worked stones, has recently attracted much attention from the Edinburgh antiquaries. A short time ago, Dr. Arthur Mitchell read a paper on this subject before the Society of Antiquaries of Edinburgh, and it was declared to be the most interesting read for a long time. We are sorry to find, however, that no light has yet been thrown on the purpose for which these curious stones were manufactured.

M. ED. LAMET is the President of the Paris International Congress for Anthropology and Prehistoric Archaeology; and M. de Mortillet, of 35, Rue de Vaugirard, the Secretary. The following is the list of corresponding members in the Committee of Organisation elected from residents in Great Britain:—Dr. Blackmore, Mr. C. Carter Blake, Mr. Busk, Dr. Carpenter, Mr. Crawford, Dr. B. Davis, Mr. Boyd-Dawkins, Mr. Evans, Mr. Fergusson, Mr. Franks, Dr. J. Hunt, Professor Huxley, Professor Jukes, Sir John Lubbock, Sir Charles Lyell, Professor Owen, Mr. Prestwich, Mr. Stuart, Dr. Thurnam, Mr. Tylor, Mr. Way, and Sir W. Wilde.

SCIENCE AND SPIRITUALISM.—Mr. Alfred R. Wallace, who is known to anthropologists by his advocacy of the unity origin of mankind on Darwinian principles, has become, or at least is at this moment, a zealous spiritualist, and has published his views under the title of *The Scientific Aspect of the Supernatural*. This fact cannot fail to be of interest to those who are curious respecting the idiosyncrasies of men of science. It has recently been remarked that the views held by Mr. Wallace on the past and coming unity of mankind "are about on a par in scientific value with Dr. Cumming's prophecies." But probably Mr. Wallace's views have been communicated to him by some kind departed spirit, perhaps that of the "first man." A more recent contribution to spiritualistic literature by Mr. Wallace is to be found in the *Spiritual Magazine* for February 1867. This account is to show that on December 14th last the spirits put a bouquet of flowers on Mr. Wallace's table. Deception in this case, we are told, was impossible. Lest we may do Mr. Wallace an injustice in giving an account of his researches, we print the account entire:—"On Friday morning, December 14th, my sister, Mrs. S., had a message purporting to be from her deceased brother William, to this effect: 'Go into the dark at Alfred's this evening, and I will shew that I am with you.' On arriving in the evening with Mrs. N. my sister told me of this message. When our other friends, four in number, had arrived, we sat down as usual, but instead of having raps on the table as on previous occasions, the room and table shook violently; and finding we had no manifestations, I mentioned the message that had been received, and we all adjourned into the next room, and the doors and windows being shut, sat round the table (which we had previously cleared of books, etc.) holding each other's hands. Raps soon began, and we were told to withdraw from the table. This we did, but thinking it better to see how we were placed before beginning the *séance*, I rose up to turn on the gas, which was down to a blue point, when just as my hand was reaching it the medium who was close to me cried out and started, saying that something cold and wet was thrown in her face. This caused her to tremble violently, and I took her

hand to calm her, and it struck me this was done to prevent me lighting the gas. We then sat still, and in a few moments several of the party said faintly that something was appearing on the table. The medium saw a hand, others what seemed flowers. These became more distinct, and some one put his hand on the table and said, 'There *are* flowers here.' Obtaining a light, we were all thunderstruck to see the table half covered with fern leaves, all fresh, cold, and damp, as if they had that moment been brought out of the night air. They were ordinary winter flowers which are cultivated in hot houses, for table decoration, the stems apparently cut off as if for a bouquet. They consisted of fifteen chrysanthemums, six variegated anemones, four tulips, five orange-berried solanums, six ferns of two sorts, one *Auricula sinensis* with nine flowers, thirty-seven stalks in all. All present had been engaged for some time in investigating spiritualism, and had no motive for deceiving the others, even if that were possible, which all agreed it was not. If flowers had been brought in and concealed by any of the party (who had all been in the warm room at least an hour) they could not possibly have retained their perfect freshness, coldness, and dewy moisture they possessed when we first discovered them. I may mention that the door of the back drawing room (where this happened) into the passage was locked inside, and that the only entrance was by the folding doors into the lighted sitting room, and that the flowers appeared unaccompanied by the slightest sound, while all present were gazing intently at the table, just rendered visible by a very faint diffused light entering through the blinds. As a testimony that all present are firmly convinced that the flowers were not on the table when we sat down, and were not placed there by any of those present, I am authorised to give the names and addresses of the whole party:—Miss Nicholl, 76½, Westbourne Grove, W.; Mrs. Sims, 76½, Westbourne Grove, W.; Mr. H. T. Humphreys, 1, Clifford's Inn, E.C.; Dr. Wilmshurst, 22, Priory Road, Kilburn, W.; Mr. T. Marshman, 11, Gloucester Crescent, N.W.; Mrs. Marshman, 11, Gloucester Crescent, N.W.; A. R. Wallace, 9, St. Mark's Crescent, N.W." The following appears in the *Spiritual Magazine* for March:—*The Flowers at Mr. Wallace's Séance.*—"Having received one or two inquiries from friends respecting the account appearing in the *Spiritual Magazine* of a *séance* at the house of Mr. A. R. Wallace on the 14th of December last, I write a line to say that what is stated perfectly describes the occurrences. I may add that I happened to sit nearer to the table than any other of the party, and that the table was between me and the light, the faint reflection of which was quite evident to me. Almost immediately after our having taken our seats, I noticed something dark, which partly shadowed the reflection of the faint window light, and observing this shadowing to spread over the table, I put out my hand, and to my amazement took hold of a sprig of the *Solanum* with its berry. I then exclaimed that there were flowers on the table, and we all remained quiet for a few moments further, when the light was turned on, and we found the flowers as stated. I can bear testimony to their having been covered with dew of a frosty coldness, as if they had but just passed through the air of the frosty night. It is also as well to add that on coming into the room everything that was on the table was taken off and the cloth removed, so that we sat by a perfectly bare polished table. The cold dew passed off the flowers in a very few minutes owing to the heat of the room.—H. T. HUMPHREYS, 1, Clifford's Inn, E.C., 22nd February, 1867." We should like to hear that the Council of the Anthropological Society of London had appointed a committee to investigate this matter.

DR. JOHN BEDDOE is, we understand, busily engaged in preparing the instructions of the Paris Anthropological Society for the local secretaries and fellows generally of the Anthropological Society.

MESSRS. TRÜBNER & Co. are about to publish an important work by Mr. George Catlin, entitled *O-Kee-Pa, or the History of Some Religious Ceremonies amongst the Mandans*. It will be copiously illustrated. An early application should be made for copies direct to the publishers.

MR. WINWOOD READE is at present studying anthropology under Professor Agassiz and Jeffreys Wyman of America.

THE catalogue of books in the library of the Anthropological Society of London is now passing through the press. At the same time there will be issued by the society a list of works required by the society. Fellows are invited to send in the titles of any works that they think it will be desirable the society should possess.

WE understand that the Anthropological Society of London have under their consideration the desirability of putting on their list of works contemplated to be published, a selection from the writings of the veteran anthropologist, Mr. B. H. Hodgson. Mr. Hodgson is now upwards of eighty years of age, and has done as much in behalf of descriptive anthropology as any living anthropologist.

DEATH OF M. BOUDIN. It is with deep regret we have to announce the death of the distinguished anthropologist, Dr. Boudin, who was president of the Paris society in 1862. This is no less than the third ex-president of the Paris society who has been prematurely removed from their labours since the establishment of that society in 1859. Dr. Boudin's works are known to a wider circle of readers than those of many anthropologists, as he was the author of several works on medical geography and statistics.

ARCHAIC ANTHROPOLOGY OF NEW ZEALAND. The following is an extract from a letter just received from Thomas Tate, Esq., jun., F.A.S.L., from New Zealand. "I am about to prepare a paper for the Anthropological Society on ancient remains found in the cave on the Waiwo, where (from what I can learn) an old type of skull, older than the modern Maori, is found associated with the remains of the moa (*Dinornis giganteus*). These caves are interesting places, the human skulls being also found together with stone instruments like our celts."

MR. HARCOURT BEATTY of Glasgow has just issued the following synopsis of a work, entitled *Ante-Diluvian Politics (Adamite and Pre-Adamite), or a Moral Cosmogony the True Theme of Genesis I to XI*. 1. Introduction—the formidable obstruction which scientific enterprise has encountered and is even now encountering from the fallible deductions of systematic theology. 2. Systematic theology not identical with Revelation. 3. Theology a progressive science,—wherefore much may yet remain to be extracted from Revelation. 4. False alarm of philosophically-minded Christians, owing to an identification of systematic theology with Divine Revelation. 5. The former portion of the book of Genesis one of those parts of Holy Writ least understood by theologians. 6. The total impossibility (upon the "orthodox" theory) of reconciling the two cosmogonies contained severally in the first and second chapters of Genesis—testimony of the best Hebrew critics to that effect. 7. The numerous contradictions of established scientific truths, and the general absurdities which the orthodox or literal exposition of the second and third chapters of Genesis involve, evidences either that the texts in question are not from God, or that the popular interpretation is not the true one. 8. A literal acceptance of the above-mentioned chapters being absurd and untenable, a symbolical or allegorical interpretation the only means of escape from an utter rejection of the sacred text,—so far, at least, as common sense may be concerned. 9. The whole scheme of scriptural symbols, examined with a view to avoid capricious and unjustifiable solutions of alleged allegorical passages. 10.

A general key to the symbols of Scripture, based upon a responsible principle;—a key perfectly adequate to the laying open of all symbolical Scripture, and most especially the acknowledged allegories of Daniel, Ezekiel, and St. John. 11. The first eleven chapters of Genesis thoroughly explained by the aid of this Scriptural key, and shewn to contain a complete secular and ecclesiastical history of that period, hitherto considered prehistoric; such history, however, being (like many of the most antique narratives and traditions of oriental nations), couched in a symbolical and mystical phraseology, constructed, however, upon certain fixed principles of symbolical composition formerly familiar to all the learned castes of the most antique nations of Asia. 12. The existence not only of pre-Adamite peoples, but also of pre-Adamite and of extra-Adamite polities, absolutely demonstrated. 13. A perfect harmony shewn to exist between the earliest known conditions of India, Scythia, Bactria, Media, Persia, Babylonia, and Egypt; and various facts recorded in the alleged allegorical History of Genesis.

Historical facts related in, or deduced from, the said allegorical narrative.

1. The origin of mankind referred to a vast antiquity,—an antiquity so remote and so vaguely alluded to, that almost any amount of ages may be supposed to have passed since the appearance upon earth of the first human beings. 2. The existence in the west of Central Asia of a pre-Adamite civilisation of a strictly Ethiopic, if not Nigritian ethnic character; a civilisation involving, among certain others, one particular system of morals and religion, which national system must be regarded as the parent of the most antique Egyptian economy known to the archaeologist. 3. The existence in the said centre of primeval civilisation of a certain Hamito-Semitic moral and religious system of a perfectly pure and true character, wherein the worship of the true God, "THE INFINITE" (Jehovah), certainly prevailed, and to which can be traced the origin of that hitherto mysterious and strictly spiritual order of priesthood which is known in Scripture as the "order of Melchizedec;"—an order which, being certainly not proper to the race of Heber, can hardly be regarded as having appertained to the line of "Noah," or even of "Adam,"—that is, upon the supposition of the existence of extra and pre-Adamite races. 4. The parallel existence of a moral and religious system erected upon a very impure and false foundation, a system, however, of a philosophical nature, and the production of great metaphysical reasoning, whence may be traced the origin of all bloody and propitiatory sacrifices, together with those necessary accessories thereto,—an elaborate and sensuous ritual, and a hierarchy of sacrificial ministers. 5. Causes which led to the adoption of these "outward accessories" of worship by the then "elect" nations *i. e.*, the peoples, in the enjoyment of a more pure ethical and religious system. 6. The early erection of a great Scythic, or Scytho-Aryan polity, the first dynastic development of the Caucasian race;—a polity which flourished long before the establishment of the earliest Egyptian, Hindoo, or Chaldean economies known to the archaeologists; a polity of which the learned have hitherto only obtained the faintest glimpse, but the existence of which had been asserted by the most far-seeing antiquarians of the last century. 7. The remarkable origin of the Medo-Persian nation, and of their priestly and philosophical order—the "Magi." 8. The origin of the primitive "Chasdim" (or Chaldean) nation, and of the Brahmanical Hindoos; also the undoubted origin of the caste system of antiquity generally, but particularly that of the Brahmanical Hindoos. 9. The origin of "dualism" in its philosophic and its spiritual aspects, and the cause of its adoption by the Iranian nations. 10. History of Brahmanism down to the establishment of the solar and lunar dynasties, and the division of the Brahmanical priesthood into the "Gaura" and "Dravira" races,—if not down to the establishment of Buddhism in its original form. 11. Origin of the "Gomerian" nations. History of the Druidical Celta;

wherein a distinct account is given of their migration from east to west, *i.e.*, from Central Asia to Western Europe. 12. The Assyro-Babylonian and Hindoo "mythology" (as it is vulgarly called, but "allegory" or "mysticism" as it really is), expressive of the same moral facts essentially as is the allegorical or mystical history of Genesis, (i to xi). 13. The origin of Magian and Median "Fire worship," and the first establishment of the true Zoroastrian system.

Exegetical and other Advantages anticipated.—A final cessation of that long conflict between natural philosophers and theologians on the ground of the Biblical cosmogony, which, beginning with Copernicus and Galileo, seems to have reached its culmination in the present age,—there being, in fact (upon the allegorical hypothesis), no common ground whereon these parties could possibly meet. A redemption from that oblivion to which ages of mystical ignorance had consigned it, of the most antique history of civilisation and religion that (probably) the world ever saw; a history treating of times which for want of sufficient light upon the symbolical records and language of antiquity, have hitherto been regarded as "pre-historic" and even "mythical." A rational, consistent, and probable explanation of all those difficult and clearly symbolical portions of the Mosaic cosmogony, and subsequent history down to the era of Abraham, the contemplation of which has staggered some of the most "orthodox" and pious; has evoked honestly expressed scruples from some of the most candid, and has provoked infidel sneers, if not infidel derision, from some of the most thoughtless inquirers. Lastly, a most felicitous reconciliation of many of the so called Gentile "Myths" (Persian, Assyrian, Hindoo, Greek, etc.) with most of the facts recorded in the Mosaic narrative.

THE MOSCOW ANTHROPOLOGICAL SOCIETY.—The following is the list of papers read in the first four sittings. Schrirowsky.—The Fossil Man of the Tertiary Period; Study of the most Remarkable Crania of the Diluvian Man. Gatseck.—On Crania Found in the Tombs of Ancient Russians. Pyictorsky.—On the Measurements of Skeletons and the length of Bones in Different Races of Mankind and the Anthropomorphous Apes. Fedtchenko.—The Crania of Egyptian Mummies, and on the Researches of Pruner-Bey on the Origin of Ancient Egyptians. Gerz.—On the Processes of Preserving Bodies used in Old Egypt. Reresnitzky.—On the Principal Characters of the Negro. Bogdanoff.—On Macrocephali. Sontzoff.—On the Ancient Graves of Russia. Kertzelli.—On Buddhism. Jaenger.—Indo-European Origins after the Discussion of the Paris Anthropological Society. Fedtchenko.—On the Relations of Linguistic Anthropology, according to Broca. Fedtchenko.—On the Aztecs; on the occasion of pretended Aztecs visiting Moscow. Sokoloff.—On the Anatomical Monstrosity of the pretended Aztecs. Belgaeff.—On the Origin of the Great Russians.

DESCRIPTIVE ANTHROPOLOGY IN RUSSIA.—An anthropological exhibition is to be opened at Moscow on the 17th (29th) of April. It will consist of a series of figures representing the inhabitants of all the provinces of Russia and the Slavonian provinces of other countries, dressed in appropriate costume, and of a collection of the natural productions and manufactures of each province. The Russian empire alone will be represented by 265 figures. Public lectures, explanatory of the objects exhibited, are to be delivered in the beginning of May.

The following paragraph is from the *Sentinel of Freedom*, Newark, New Jersey, U.S., Dec. 11. "Traces of prehistoric civilisation have been found in St. Anthony, Minn. A trap-door, secured by a curiously shaped lock, was discovered in the floor of a cellar, and upon pushing investigation further, it was opened, and a spiral staircase, leading down one hundred and twenty-three steps, appeared. It ended in a passage which led into an

artificial cave, about which were strewn iron and copper instruments, and at one side of which was an elevated platform and rude seats. A stone sarcophagus was also found in another apartment, which on being opened disclosed a human skeleton."

ON THE SKULL OF DANTE.

To the Editor of the Anthropological Review.

Shelton, Staffordshire, Jan. 24, 1867.

Dear Sir,—I have received the following communication, which forms a postscript to his letter on the skull of Dante in your last number from my friend Professor Welcker. It is of considerable interest, and I trust you will afford it a place in the *Review*. I am yours faithfully,

J. BARNARD DAVIS.

"Halle, 16th January, 1867.

"My highly-esteemed Friend,—Permit me to make some supplementary communications to my letter to you 'On the skull of Dante.'

"A very weighty vote for the genuineness of the mask of Dante is found in the splendid work of Charles Eliot Norton, issued in commemoration of the six hundredth year jubilee of Dante—*On the Original Portraits of Dante*, Cambridge, Massachusetts, 1865. This book, but fifty copies of which were printed, appears to have had only a late and limited distribution on this side the ocean. I have to thank the good kindness of the renowned Dante-inquirer (Danteforscher) Witte, for a knowledge of this work, whose hands it reached in October of last year, after I had sent my letter to you away. Since your equally instructive and kind letters to me contain no mention of this excellent book, I presume that it has hitherto escaped your notice. I might rejoice at finding my views, and the position I have taken in many points, repeated in this work. The very skilful author, who gives an excellent photograph of Giotto's portrait of Dante, and also a copy of the mask, placed in the same position, declares his opinion of the perfect agreement of the two.

"It is the same face with that of the mask; but the one is the face of a youth, 'with all triumphant splendour on his brow;' the other of a man burdened with 'the dust and injury of age.' (P. 18.) The question I put forth, whether in Dante's time death-masks were already used, we find touched upon at p. 11. Norton also expresses himself as not being quite sure upon this point. He remarks that, according to Vasari's testimony, this art came into use in the second half of the fifteenth century, and that the death-mask of Brunelleschi, who died in 1446, is alluded to by Bottari. But Norton presumes that so simple an art might very well have been employed at an earlier period than that of Brunelleschi, and that the friend and protector of Dante, Guido Novello, in order to obtain a first draft for a bust to be executed at a later time, would have taken a death-mask.

"On the 'mask' Norton finds the definite characters of a *death-mask*. 'It was plainly taken as a cast from a face after death. It has none of the characteristics which a fictitious and imaginative representation of the sort would be likely to present. It bears no trace of being a work of skilful and deceptive art. The difference in the fall of the two half-closed eyelids, the difference between the sides of the face, the slight deflection in the line of the nose, the droop of the corners of the mouth, and other delicate, but none the less convincing, indications, combine to show that it was, in all probability taken directly from nature.' (P. 14.)

"We learn from Norton that three Dante masks (probably joint copies of the original mask preserved by the painter Tacca) exist in Florence. One in possession of the painter Kirkup, one with Professor Ricci, the third the

Torregianian mask. The one communicated by North in three photographic representations, is that of Kirkup's. This, so far as I can discover, agrees in all parts with the Torregianian. It is the Torregianian mask, with the omission of the cap (Focale). It has exactly as much forehead, and as much frontal and temporal hair, as in the Torregianian mask; the cap leaves uncovered.

"Thus the repeated and careful comparison of the portrait by Giotto, the mask, and the skull, leads to the result that the mask and skull are authentic. These little notes I should like to have appended to my former letter. Adieu.

"Your most devoted friend,

"HERMANN WELCKER."

WAGNER ON THE OCCIPITAL LOBE OF MAN AND APES.

A LETTER TO DR. JAMES HUNT.

HONOURED SIR,—I perceive, from the reports of the Anthropological Society, which I have only lately seen, that you had undertaken the translation of Carl Vogt's *Lectures on Man*. If you share my opinion that every person should contribute his mite to the truth, then I am sure you will excuse my taking the liberty of drawing your attention to an important error in the above work, which must necessarily escape the attention of every person who has not the original treatise to compare with.

An author who criticises and sends forth his publications so rapidly cannot work with desirable correctness; and often (so say some great authorities in Germany) his sparkling arguments would fail if he had studied the views of his author more minutely. I venture, therefore, to send you a copy of a small treatise which had for its object to find out a method by which to express the size and development of the cerebral surface. My treatise is thus a sequel of that which my late father, Rudolph Wagner, has entitled, *Vorstudien zu einer Morphologie und Physiologie des menschlichen Gehirns als Seelenorgan*. You will have found the results stated in the treatise in the first part of Vogt's *Lectures on Man*.

Vogt supports his sole proof, which he gives (i, pp. 211-214) for the view that the microcephale has an occipital lobe at least as large as that of the ape, upon a false quotation from the work of my father. If you will have the goodness to read note 9, p. 12 of my treatise, you may convince yourself of the error committed by Vogt. You will perhaps kindly rectify it, should a second edition appear of your translation.

I trust you will not consider it an act of presumption to request you as President of the Anthropological Society of London to rectify this error. You will no doubt pardon the zeal of a young man who takes great interest in anthropological studies, who was favourably situated to pursue such studies both under the guidance of his father, and from having had at his disposal the rich collection of Blumenbach. The death of my father, of which such honourable mention is made in the report of the Anthropological Society, has caused a change in my position, and I have turned my attention to a different field. Fate has, in singular manner, directed me to the city in which the venerable Blumenbach was born. Some years since, the little street in which the house he was born in stands, has changed its name and is now called "Blumenbach Street."

I perceive with great pleasure that Mr. Bendyshe has translated Blumenbach's anthropological treatises into English. You will perhaps be kind enough to inform him, that if he desires to have some notices or information concerning Blumenbach's works or collections, I may be able to assist him, as I possess several of the author's editions, e.g., his contributions to natural history, second edition, enriched by marginal notes in

his own handwriting. I may also state that my father was the immediate successor of Blumenbach in Goettingen (1840), and up to Easter, 1864, I myself occupied the place of assistant at the Anthropological Museum of Goettingen, and was preparing for press a catalogue of the cranial collection when the death of my father interrupted my labours. I take this opportunity of assuring you of my high consideration.

DR. HERMANN WAGNER,

Professor of Natural History at the gymnasium of Gotha.

CEREBRAL MEASUREMENTS.*—Dr. Hermann Wagner, son of the lamented Professor Rudolph Wagner of Goettingen, has lately published a treatise on this subject, in which he complains of a misstatement made by Dr. Vogt in his recent work, *Lectures on Man*. Referring to Table II, containing the results of the measurements made by his lamented father, Dr. H. Wagner makes the following remarks:—"I take this opportunity to draw attention to an error committed by Dr. Vogt, in his recent work, *Lectures on Man*. This author refers to the above table as affording a proof that the microcephalous possesses an occipital lobe as large as that of the ape. After quoting some remarks of my late father on the difference between the simian and the microcephalic brain as regards the occipital lobe, Vogt continues thus:—'Now, gentlemen, I have taken the trouble of subjecting these proportions to measurement, and as I myself have no materials at command, I have measured Professor Wagner's delineations. I have, in the engraved brains of a microcephalous and a chimpanzee, measured two distances on the left side; the first from the apex of the brain to the vertical fissure which separates the posterior lobe, the second from the above fissure to the end of the posterior lobe. I find for these measures in the chimpanzee; length of the anterior lobe = 76 millimètres, of the posterior lobe = 21 mm. In the microcephalous; length of anterior lobe = 75 mm., of the posterior lobe = 20 mm. I farther find, from Wagner's measurements of the cerebral surface, that it is to the surface of the posterior lobe: mean in eight males = 100:16·2; that, on the contrary, in the microcephalous, the proportion is = 100:68·5; that, therefore, the posterior lobe presents a surface four times greater than in the adult man; that, therefore, the idiot has a posterior lobe at least as much developed as the ape. Result. The posterior lobe is in the microcephalous just as large as in the ape, etc.' Now, as regards the first point, it is well known that perspective drawings do not admit of measurements; moreover, a glance at Table II shows at once that, in this case, the right proportions cannot be expressed by the extension of a single length. As regards the second point, we find in Table II the convex surface of the frontal lobe, 282; parietal, occipital, and temporal, 614 approximately; whole brain, 896. Vogt now takes the surface of the three lobes, which, on account of the smallness of the brain could not well be divided, to represent the surface of the occipital lobe alone, simply because the number happens accidentally to stand under that heading. He thus obtains the proportion of the whole brain to the occipital lobe = 100:68·5, without in the least considering that there exists neither a human nor a simian brain in which the occipital lobe attains 68·5, that is to say, two-thirds of the whole cerebral surface, which would only leave one-third of the whole surface for frontal, parietal, and temporal lobes. This mistake upsets the whole of his argument." We have, in the interest of science and in justice to the late Professor Wagner, thought it right to transcribe the whole passage, feeling assured that Dr. Vogt will take the correction in good part, and rectify his error at the first fitting opportunity. As regard Dr. Wagner's treatise, to which we may recur on a future occa-

* *Maassbestimmungen der Oberfläche des grossen Gehirns*. Goettingen: 1864.

sion, we would merely observe that, though not rich in results, from the small number of brains subjected to measurements, it suggests various improvements in method, and shows the author to be a painstaking inquirer. Additional tables, rectifying some of the results previously obtained, will render the essay useful to such as possess Professor's Wagner's *Introduction to the Morphology and Physiology of the Brain*, to which it forms an appendix.

To the Editor of the Anthropological Review.

Kulladghee, June 10, 1866.

DEAR SIR,—I beg your acceptance of the small pamphlet herewith forwarded. It embodies the views of a Parsee, a native of India, on the causes of the immense gulf that separates the Europeans from the Hindoos, morally, intellectually and physically, and the *rationale* thereof grounded on the principles of hereditary transmission, which are the recognised basis of the science of man, which your ably conducted periodical is established to promote.

The following extract from a letter penned about a fortnight before the receipt of the last number of your *Review*, will show how much my opinions coincide with those embodied in your article on "Race in Legislation and Political Economy," wherein the question of race as an important element in "the survey of human nature and life" is so admirably, so temperately, so ably and so convincingly argued.

"You may perhaps think that I lay more stress on the fact of hereditary transmission, that I have a stronger belief that it is through the gradual and painfully slow discipline of centuries and not in the course of a few generations that India's thorough regeneration can and will be effected, than is warranted by facts or philosophy; and that I take no account of the physical agencies, the social phenomenon, the political antecedents—in a word, all the natural causes which have contributed to bring about her degraded and lamentable condition. Without making light of, much less ignoring, the historical antecedents, the social associations and environments, and the physical causes whose operation is indisputable, I beg to assure you, Sir, that my belief is founded on several years' experience of the influence of heredity on individuals of different races, castes, and creeds, as well as of one and the same community; and I feel convinced that no native of India, whatever may be his birth, rank, caste, occupation, or religion, and however highly endowed by nature or improved by culture, has been known or may possibly be able to equal or even approach Europeans under similar circumstances, as to fortune, birth, profession, caste, colour, or creed, and that the natives of India, transplanted into foreign soils, where nature is more propitious and the artificial or natural surroundings are more favourable to their development, morally, intellectually, physically, will not be able at once to attain to the intellectual calibre, the physical stamina and moral grandeur, the strength of character and will of their neighbours; no matter how well directed be his energies, and assiduous and steady his efforts in pursuit of the ideal, the sight of which might fire him with the ambition of realising it."

Now, if the potency of race is so influential in producing such differences among cognate races, how much more puissant must be its influence on those "separated from Englishmen by such broad lines of demarcation as the Negroid and Mongolic populations of Central Africa and Eastern Asia?"

But my object in troubling you with this letter is not so much to obtrude the fact of my opinions being at one with your own, as to point out how superior in this, as in some other respects, is Mr. Herbert Spencer's philosophy to Mr. Mill's. He not only recognises the power of social and moral influ-

ences, but takes into account in conjunction with these the organic conditions and the transmissible mental constitution of the races, which again he shows are susceptible of undergoing modifications under the influence of social, moral, and physical forces, which are ever changing, brought to bear on them for thousands of years, and not in the insignificant space of time which has elapsed since the dawn of authentic history. And not only in this department of the science of man does he reconcile the conflicting doctrines of the two schools of thinkers, but in psychology also is his philosophy sufficient to effect the reconciliation between the *à priori* hypothesis and the experience hypothesis, by regarding knowledge as well as character or psychical and physical peculiarities, feelings and faculties, as acquired not only by individual experiences, but also by the experiences of remotest ancestors organised in the race.

This sense of his superiority it is that lately elicited a communication from me to the address of the Secretary to the Bombay Branch of the Royal Asiatic Society, a copy of which I beg to enclose herein, and which you are welcome to make use of in any way you please. Trusting you will excuse this trespass on your valuable time. I remain, dear Sir, your most obedient Servant,

NOURAJA BYMAIJ.

"To the Secretary to the Bombay Branch of the Royal Asiatic Society, Bombay.

"Kaladghee, June 5, 1866.

"SIR,—In forwarding to you the accompanying copy of a letter addressed by me to Mr. Herbert Spencer, I solicit the favour of your laying before the members of the august and respectable Society of which you are Secretary, this my humble but earnest appeal to their generous disposition, as well as to their sense of duty, for according a handsome support to that distinguished philosopher, so as to enable him to continue his labours in bringing to a successful completion the work mentioned therein, which is destined to be the crowning glory of British genius, and to shed the greatest lustre on the British name, and which the author has signified his intention to discontinue for want of a sufficient number of subscribers, entailing a drain on his private purse which he can ill sustain. It cannot surely be expected that a writer should incur a continuous pecuniary sacrifice, and yet go on favouring the world with a series of works destined for immortality. It would not only be the height of presumption on the part of a native of India like myself to point out the supreme excellencies of that eminent thinker and writer, and his unequalled merits as the founder of a new system of philosophy, but it would be an insult to the intelligence of a body of the most eminent literary and scientific men that this Presidency can boast of. Equally needless and supererogatory would it be for me to urge his claims to the patronage of that body by any very elaborate piece of ratiocination. His hitherto published writings possess too conspicuous and sterling merits, and the members of the Society to which I have ventured to address this letter, have too much perspicacity and penetration to need any eulogy on my part to commend them to their favourable consideration.

"You will, I hope, agree with me in supposing, that none of the members of your Society, who is at all acquainted with Mr. Spencer's writings, would make light of the claims he has established on the esteem, admiration, and gratitude of mankind, and that it would be something akin to the discharge of a debt, if they, one and all, contributed their mite towards enabling him to add immensely to the obligations under which he has laid Englishmen and natives alike (not to speak of Europeans and Americans as well), and to his title to rank with the highest orders of minds—with an Aristotle, a Bacon, a Bentham, or a Comte.

"I beg, therefore, only to remind them of the duty they owe, not only to their illustrious benefactor, but to themselves, as the *élite* of the Bombay community, capable of appreciating and rewarding the merits and services of their greatest philosophers, and of thereby not only signalling their superiority to their brethren in England, who have to all appearance suffered him to discontinue his valuable labours, but themselves to be robbed of the most precious of gifts with which they could be blessed, and which they could easily have secured by a judicious and timely exercise of patronage, but also of rescuing the British name from the ignominy they have earned by the want of encouragement on their part which I so deeply deplore.

"In concluding this appeal to their good sense and sagacity, as well as to their generous feelings, I beg to solicit forgiveness of the Society for this piece of extraordinary liberty I have ventured to take, by addressing to such an exalted assembly, what might I fear appear to them an impertinent epistle. May I also beg their acceptance of the pamphlet alluded to in the letter which accompanies this, and to remain, Sir,

"Your most obedient Servant,

"(Signed)

"NOURAJA BYMAIJ."

THE AZTECS.—In volume iv, 1856, *Transactions of the Ethnological Society of London*, there is a paper by Mr. Cull and Professor Owen on this subject. I was present when the paper was read. The children, a boy and girl, reported to be brother and sister, were at the meeting under the care of a Mr. Morris, and the general opinion was that they were little idiots. I considered them to be a Zambo-Mulatto breed, not Aztecs of America, but from Central America. Since that period they have been exhibited by Mr. Morris. In *Daily Telegraph*, January 8th of this year, there is a long account of the Aztecs, their marriage, and that a fashionable wedding-breakfast had been provided by them at the Hanover Square Rooms. The article in the *Telegraph* alludes to them as *crétins* and as *brother and sister*. Professor Owen is lugged in thus, "It is some satisfaction to know that Professor Owen has given an adverse opinion to the original hypothesis of their close consanguinity." When and where? "Maximo Valdez Nuñez and his bride Bartolo Vasquez are very much alike—especially Maximo—but they are not the children of one father and one mother." This is but a mere assertion, how about the fact? In the *Journal Encyclopédique*, par B. Lunel, Paris, 1857, article "Azteques," tom. ii, p. 337, is a letter communicated by M. Boursier, late French Consul at Quito, which he had received from General Various, formerly Governor of San Miguel in the republic of San Salvador. The following is an extract from said letter. "When on my way," says the Governor, "to visit the district of Usuttan, I met Raymond Selva, who was going to the farm of Leon de Avila. We arrived at Jacotal, at which place I remember seeing the two children, a brother and sister; they were curious-looking and small. Continuing my journey, I observed to Selva, that if the mother, a poor woman, could exhibit them in Europe, or through some intelligent person, she would reap a fortune for them. On arriving at Jacotal, Selva said he would propose to the mother to give him the possession of them, and to share profits with her; that this could easily be done if I used my influence, which I did. Selva took charge of the children and prepared to leave by the river San Juan de Nicaragua, accompanied by a Yankee. Selva was concerned in an Indian outbreak at San Juan, was made prisoner, and received fifty lashes. The Yankee got away with the children to the United States. Some time afterwards, Selva told me, that wishing to get back the children and the profits for exhibiting them, the Yankee refused to comply, when Selva went to law with him. Selva subsequently sold the children to the Yankee for

£3,600, who took them to London. The mother of these children is a vigorous Mulatto, the father is a Mulatto; as to the children being Aztecs is a fable. They are idiots; they were known in the country as *monitos*, or little monkeys."—A TRAVELLER IN THE NEW WORLD.

EXTRACT OF A LETTER FROM J. S. WILSON TO W. BOLLAERT.—"Quito, Jan. 19, 1867. My journey to Canelos will enable me to send a paper to the Royal Geographical Society. I endeavoured when there to obtain information of interest for the Anthropological Society. I obtained the measurements of the heads of eight Indians of rather impure breed, who carried our baggage down to that country. On our return, we got thirteen Indians to accompany us, but the rascals deserted us before they reached the first white settlement. I intended to have taken their measurements next day. I have made a bargain with a trader in Canelos to obtain some skulls of the Jivaros. These he will buy of their enemies, the Canelos. Having seen the question mooted by the fact of Mr. Blake having extracted from an Indian tomb in Peru a skull with human hair attached, I have obtained two samples of hair at Canelos, to show that the colour of the hair of the Indians is by no means invariably black, nor invariably coarse. I shall communicate my observations as soon as I have got them in order, and send the samples of hair with them.

WHO WERE THE ANCIENT BRITONS?—The *Medical Times and Gazette* gives the following account of the Rev. W. Greenwell's recent lecture:—

"Most of our readers notice at times paragraphs in the newspapers detailing the accounts of the examination of ancient burial mounds by the Rev. W. Greenwell. They may also be interested in the controversy now going on with regard to the round and long head, and the round and long barrow question. They may, besides, wish for materials for settling the question, who were the ancient Britons? A few years since, as an eminent French archaeologist says, the name Gothic was applied to almost all the buildings from the eleventh to the sixteenth century. Are we more precise in our use of the word Celtic to any pre-Roman remains in Britain and France? Are the inhabitants of these islands even more mixed than is commonly believed? Did a mixture of Berber and Basque from Africa and Spain, and of Lapp from Scandinavia, precede the mixture of Belgian, Celt, Frisian, Dane, and Norman? In order to furnish materials for thought on these topics, we propose to give some notes of a discourse delivered last Friday evening at the Royal Institution by the Rev. Canon Greenwell, in which he presented a summary of his researches. The east wolds of Yorkshire—the place where the principal explorations have been made—were described as a somewhat quadrilateral district, of moderate elevation, with its surface varied by deep waterless valleys and rounded chalk hills, like the Wiltshire downs; covered with scanty herbage, thorn, furze, and ling, little wood, and no animals; bounded on the south by the valley of the Humber, on the east by the sea, on the west by the York valley. Now, there is evidence that this district was largely cultivated in pre-historic times—evidence derived partly from the occasional discovery of the site of rude circular wigwams from fifteen to twenty feet in diameter, sometimes excavated in the ground, sometimes built above it, and sometimes still retaining vestiges of a rude stone bench around, and of a central hearthstone whence the smoke ascended through the roof. Such vestiges, however, are soon obliterated by the plough. There is no evidence of large camps; the people were probably divided into small tribelets. The trackways by which they went to the nearest stream to fetch water are yet visible; and the territory seems bounded on the north by an earthen mound with fosse, nearly twenty miles long—whether for defence or as a landmark seems uncertain. It is most likely that the people who inhabited these wolds got their food by

hunting in the swamps and thickets which bounded them, and which, whilst affording covert to animals, offered scarce any habitable or defensible positions for man. Who were these people? Without borrowing from Ptolemy the names of Brigantes and Parisii, Mr. Greenwell proposed to determine this question by examination of their remains; and has come to the conclusion that there were two races, of which one inhabited the district first and alone, whilst at a later date they existed side by side with another race which intruded itself amongst them. He is led to conclude that the earlier people were a long-headed or dolichocephalic people; that they buried their dead under barrows, tumuli, or mounds of an oblong shape—from three to four times as long as broad—generally lying east and west, with one end larger than the other, and the primary interment under the large end. By the term primary interment is meant, of course, the first body buried. Many other burials may have succeeded, the bodies being placed in part of the circumference, and the mound enlarged to cover the new bodies. Let us say, by way of parenthesis, that the general plan of mound burial seems to have been identical all over the West of Europe, England, Ireland, and Brittany. The body was placed in a square chamber, constructed in the best method available—in some places a humble square excavation into the chalk, covered over with a pile of stones; in other magnificent instances which abound in Western Brittany, a huge chamber formed of colossal stones, one at the bottom, one at each side, and one for a cover; this chamber, too, perhaps, with a vestibule or wings added. But, in any case, the whole was covered with a huge mound of earth. These mounds are now in the farmer's way; they are perpetually levelled by the plough; thus in time the central stones (if any) become exposed; people see one huge stone atop, supported by others, tablewise; they overlook the fact of the interment; or the bones are scattered and forgotten, and the denuded stones pass with the vulgar as Druidical altars; and the solemn circles of stone set up to mark and dignify the burial-place, inspire the brains of antiquaries with notions of a primeval worship of the serpent that tempted Eve, or of some diabolical attempt to figure the signs of the Zodiac. Were the matter sufficiently medical, we should be glad to treat of *menhirs* and *dolmens*; but we must stick to ethnology. The elderhood of the long barrow, and of the long skull found therein, is, according to Mr. Greenwell, evident—first, from the total absence of metallic remains, and from the abundance and excellence of the flint implements, which are superior in finish to those found in the assumed later barrows along with bronze. Secondly, from evidence of cannibalism. This evidence consists in the discovery of bodies buried, as is believed, at the same time with the primary interment, and never disturbed since: in one case so many as eighteen bodies were found at the east end of a long barrow; of men, women, and children; the bones scattered and broken, and in such a way as could only have been done with the recent bones. In the long barrows in the wolds, the bodies had evidently been burned, although the action of the fire was in some instances very incomplete. It seemed as if the bodies had been deposited, then covered over with a layer of chalk and flint, and wood heaped on the top of this, so as to burn the body within, and weld the covering into a compact, half-vitrified mass; but in many cases the action of the fire was evidently very imperfect. In one case, over a mass of burnt chalk and bones 35 feet long and 3 feet high, had been raised a mound of chalk, rubble, and earth 140 feet long, 50 feet wide, and 7 feet high. The skulls found in the long barrows, according to Mr. Greenwell, illustrate Dr. Thurnam's alliterative axiom—long barrow, long skull. The face is upright, with no tendency to prognathism; the forehead, on the whole, narrow, but not receding; the superciliary ridges only slightly projecting, and the middle of the skull along the line of the sagittal suture assumes to some extent a keel-shaped form. The parietal prominences are ill-

developed and much rounded off, and the upper part of the occipital region is very projecting. Judging from their bones, these people were probably not more than 5 feet 5 or 6 inches in height, and probably of pleasing appearance, with soft rounded features, and an absence of ruggedness of outline in the skeleton. In Mr. Greenwell's opinion, they were the earliest inhabitants of these wolds, for no sepulchral remains of any race before them have been found. He thinks that we must look to Spain and North Africa for a people similar to them. The Basque head is decidedly dolichocephalic. The paucity of long barrows tends to show that the population at the time of their erection was but scanty. The round barrows of the later race are very abundant. They are of various sizes, ranging from 15 feet in diameter to above 100 feet, and in height from 2 feet to near 20 feet, the most common being about 50 feet in diameter and 5 feet high. In shape they are like a flattish inverted bowl; they are usually formed of surface soil and chalk rubble, and they generally crown the heights. They were, no doubt, erected only over the remains of the chiefs of the people and their families. In some cases, perhaps, the wives and children and attendants of a distinguished chief were slain and buried with him, and it is not uncommon to find a very young child occupying the central place in a large barrow. The ordinary dead were doubtless buried without barrows in cemeteries, and at one of these places (at Elton, near Beverley), in making a railway, above seventy bodies, placed in the ordinary "British" manner, were discovered. Mr. Greenwell also referred to the circles formed of stones, earth, etc., intended to preserve the barrows from desecration. These barrows also afford evidence of burial with burning and without it, the latter being the more prevalent mode, due, doubtless, to the scarcity of wood. In some cases both were adopted contemporaneously. When unburnt the bodies appear to have been interred with their clothing, with the knees to the chin, most frequently on the left side, sometimes being laid on the ground, and sometimes in a cist formed of four or more stones set on edge with covers. At Gristhorpe, a perfect skeleton was found in the hollow of a tree, which, from its colour, has been termed "the Black Prince." The remains of burnt bodies have been found in various positions in urns or small hollows. In the latter part of this discourse Mr. Greenwell gave full details of the investigation of several series of barrows containing unburnt and burnt bodies. In the former, besides the bones of persons of all ages, the investigators came upon relics of the funeral feast, broken bones of wild oxen, deer, swine, and goats, potsherds, flint chippings, etc. In the barrows containing the remains of burnt bodies they discovered, besides many flint implements, bronze daggers with bone handles, ornamented urns, food vessels, and drinking cups. The bodies of males in many cases were associated with stone weapons and implements, and those of women with stone rubbers or corn crushers, flint knives or scrapers, jet and amber necklaces, buttons, and other ornaments. Bronze celts and other weapons are also found. The skulls of the people buried in the round barrows present two distinct types, as well as a third, possessing the characters of both combined, probably descended from a mixture of the two. One type is that of the long-headed race already described; the other, that of the intruding conquerors, was of a round-headed people, with an average stature of 5 feet 8 or 9 inches, a broad head, especially square in the hinder part, and a high forehead, the parietal bosses being strongly developed, and the occiput so much flattened as to suggest the idea that it had been made so by artificial means. These people must have presented a savage appearance, as all their features were prominent, the mouth and eyebrows projecting, and the cheek-bones high and angular. With regard to their origin, Mr. Greenwell considers that we must look to the North of Europe, as they approach in the type of their skull to that of the people of the stone age buried in the chambered barrows of Denmark, who may

have been allied to the Lapps, the representatives of a race at one time probably widely spread over the North of Europe. In conclusion, Mr. Greenwell alluded to the objections made to his view of the antiquity of these people. He stated that Caesar and Tacitus testified to the use of iron by the Britons of their time, and affirmed that no iron had been found in any of these barrows, and that hitherto no evidence of Roman influence had been discovered in them. He said that, however easy it might be to say to what period they do not belong, it is impossible to give more than an approximate date to them. With more extended researches we may be able to arrive at more certain conclusions. 'In the meantime it is safer not to lay down any specific date, but to say, what we can with confidence do, that they belong to a time which ends a century or two before the occupation of Britain by the Romans.'

THE EMANCIPATED NEGRO.—Mr. Munro, the British Consul at Surinam, in a report to the Foreign Office, describes the immediate effect of emancipation on the Negro slaves in the Dutch colony. On the 1st of July, 1863, the freedom of the slaves was promulgated, and the rights and privileges of freemen were accorded to them. "The Negro population received the boon without any great signs of exultation; the day passed over even with more stillness than a Sabbath. The agricultural labourers did not so readily turn out to work, and when they did, it was only to work what they pleased, and that generally was but poorly done. Many of the people, when the time of contracting with the owners of estates was appointed, left their former homes, and took to squatting in the bush, and abandoned plantations and grounds, on the borders of creeks in the neighbourhood of towns, where they lead a life of comparative idleness, of little use to themselves and less to the community at large, returning to a state of gross heathenism, practising and enjoying the superstitious African dances, with all their immorality. Their wants being few, are easily supplied from a bountiful soil, forests teeming with game, and the rivers, creeks, and swamps abundantly stocked with fish, which require but little exertion to procure. The Negro population who have remained on the estates do as little work as possible, which tells greatly on the crops; they do little else than reap the fruits of former years' labour, planting but little for the future."

AN ANTI-MALTHUSIAN FAMILY.—At Lloyds, near Ironbridge, Salop, the other day Mrs. Felton, the wife of a labouring man, presented her husband with twins, for the third time. What makes the matter more remarkable is, that two of her sisters have twice had twins.—From Eddowes's *Shrewsbury Journal*, Oct. 3rd, 1866.

A YOUNG MOTHER.—The Registrar of the Park (Sheffield) district reports to the Registrar-General:—"I have registered the birth of a child in my district this quarter, the age of the mother being only thirteen years and ten months. She was employed in a cotton mill in the neighbourhood of Manchester."

PROOFS OF EARLY CIVILISATION IN IRELAND.—Lord Lifford has had a political controversy with Mr. Bright respecting the condition of Ireland. Mr. Bright proposes to revert to the land system in force before the conquest by Cromwell. Lord Lifford describes in a few forcible words the deplorable condition of the people at that time, and after showing how completely they were at the mercy of the chiefs, he says:—"As well might we compare the graceful coronation of Queen Victoria with that of an ancient Irish prince, who sat naked in a bath with the boiled carcass of a cow, which he tore with his teeth, while his nobles supped the broth in which his Highness sat."